MODERN MEDICINE

The Journal of Diagnosis and Treatment

MERCODOL's distinctive antitussive brings

MORE COMPLETE RELIEF FOR YOUR COUGHING PATIENTS

Mercodol's selective cough-controlling narcotic[1] stops the wracking cough . . . but does *not* interfere with the cough reflex your patients *need* to keep passages clear. In addition, Mercodol provides an effective bronchodilator[2] to relax plugged bronchioles, and an expectorant[3] to liquefy secretions. The result is *more complete cough relief* . . . remarkably free from nausea, constipation, and cardiovascular or nervous stimulation.

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An exempt narcotic

THE ANTITUSSIVE SYRUP THAT CONTROLS COUGH—**KEEPS** THE COUGH REFLEX

MERCODOL with **DECAPRYN**
For the cough with a specific allergic basis

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Each 30 cc. contains:

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2. Nethamine® Hydrochloride	0.1 Gm.
3. Sodium Citrate	1.2 Gm.

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Par-Pen's dual action provides

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rapid and prolonged vasoconstriction

Potent bacteriostasis—Par-Pen provides 5000 units of penicillin per cc. It is therefore a potent weapon against the many penicillin susceptible bacteria which frequently initiate colds, and which almost invariably prolong and intensify colds of primarily virus origin.

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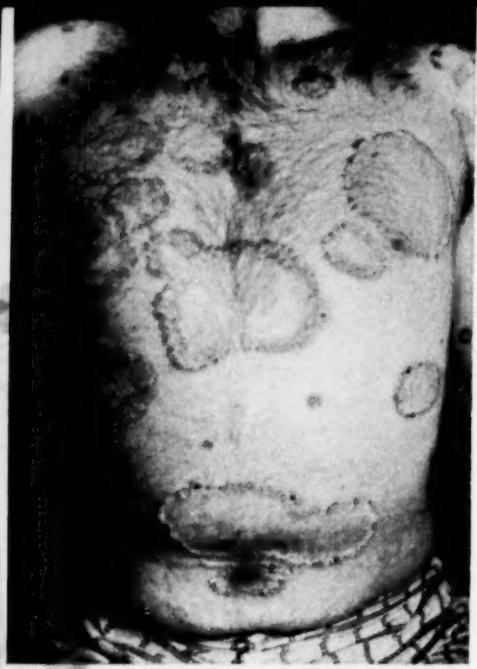
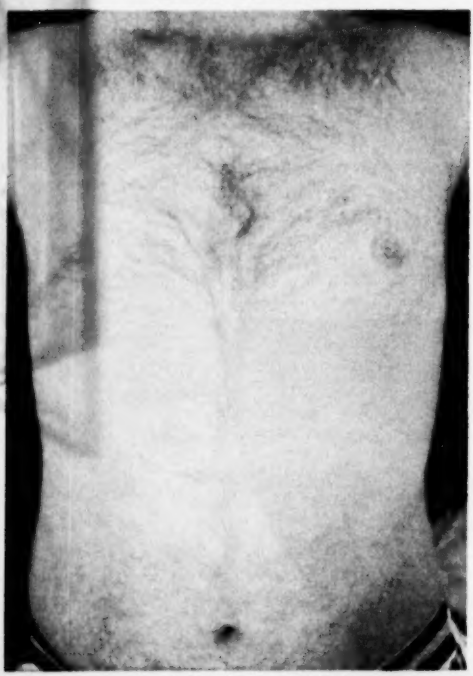
'Paredrine' and 'Par-Pen' T.M. Reg. U.S. Pat. Off.



BEFORE Use of RIASOL



AFTER Use of RIASOL

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Clinical research proved that **RIASOL** controlled the skin lesions of psoriasis in 76% of the cases in a stubborn group. Since psoriasis constitutes 6% of all skin disorders, these results are significant.

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not necessarily . . .

Tedral, taken at first sign of attack, often forestalls severe symptoms.

in 15 minutes...Tedral brings symptomatic relief with a definite increase in vital capacity. Breathing becomes easier as Tedral relaxes smooth muscle, reduces tissue edema, provides mild sedation.

for 4 full hours...Tedral maintains more normal respiration for a sustained period—not just a momentary pause in the attack.

Prompt and prolonged relief with Tedral can be initiated any time, day or night, whenever needed without fear of incapacitating side effects.

Tedral provides:

theophylline	2 gr.
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phenobarbital	1/8 gr.

in boxes of 24, 120 and 1000 tablets

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MODERN MEDICINE

THE JOURNAL OF DIAGNOSIS AND TREATMENT

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in peptic ulcer–

NEW CONVENIENT CHLOROPHYLL THERAPY

Chloresium® MUCINOID Tablets · Powder

for rapid relief of symptoms and tissue repair even in intractable cases

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highly concentrated, purified water-soluble chlorophyll promotes healing of affected areas, duplicating the outstanding results obtained in treatment of external lesions.

specially prepared, mucilaginous okra base clings tenaciously to mucosal walls, protecting against erosion and maintaining the chlorophyll in prolonged contact with the lesion.

prompt, sustained antacid action — without undesirable side effects — provided by magnesium trisilicate and aluminum hydroxide.

packaging: CHLORESIUM MUCINOID is available in bottles of 50 and 200 tablets and in boxes of 25 powders.*

*CHLORESIUM POWDER will continue to be available in boxes of 25 envelopes but will now be sold under the name CHLORESIUM MUCINOID.

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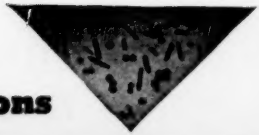
MODERN MEDICINE

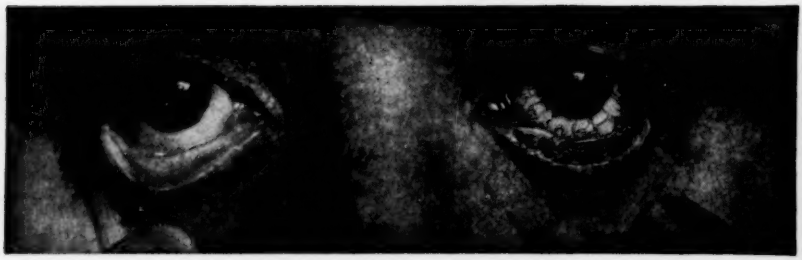
THE JOURNAL OF DIAGNOSIS AND TREATMENT

for

eye

infections





new

Gantrisin Ophthalmic

GANTRISIN DIETHANOLAMINE

'Roche'

Because Gantrisin* Ophthalmic has a wider antibacterial spectrum, it is highly effective against many microorganisms found in conjunctivitis, blepharitis, dacryocystitis, corneal ulcer, trachoma, superficial punctate keratitis and other eye infections.

Because Gantrisin Ophthalmic is an isotonic solution, it usually does not irritate or sting the eyes. The fact that it is a single sulfonamide, not a mixture, reduces risk of sensitization. A sterile, stable solution containing 4% Gantrisin Diethanolamine in 1-oz vials with dropper, it does not require refrigeration.

more effective

In a series of 180 cases, new Gantrisin Ophthalmic Solution proved more effective "*in acute and subacute conjunctivitis produced by either gram negative or gram positive organisms.*"†

safer Gantrisin Ophthalmic is "*better tolerated, and less prone to the production of sensitization or allergic reactions than any of the other sulfonamides or antibiotic preparations.*"†

†Quinn, L. H., and Burnside, P. M., *Eye, Ear, Nose & Throat Monthly*, 30:81, Feb., 1951

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for September 1 1951

Modern Medicine
Vol. 19, No. 17

THE MAN ON THE COVER is Dr. Walter C. Alvarez, the new Editor-in-Chief of *Modern Medicine*. Dr. Alvarez, Senior Consultant Emeritus in Medicine, Mayo Clinic, and Professor Emeritus in Medicine, Mayo Foundation, University of Minnesota, is engaged in active practice in Chicago. In addition to hundreds of articles published in medical journals, Dr. Alvarez is author of the following books: *Nervous Indigestion; Introduction to Gastroenterology; Nervousness, Indigestion, and Pain;* and *The Neuroses.* (For further information see "Letter from the Editor" on page 16.)

Contents for September 1 1951

CONTINUED

(Continued on page 14)

IN ALL STAGES OF

CONGESTIVE HEART DISEASE...

SYNTRATE

TRADEMARK

HYPERTENSION... promotes gradual and prolonged lowering of blood pressure through peripheral and coronary vasodilating effect of essential hexamethylenetetramine (1½ gr.)

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Contents for September 1 1951

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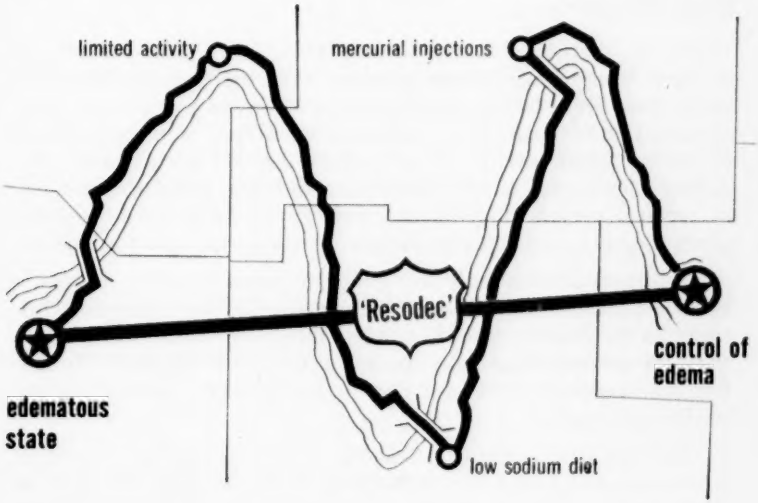
A "short cut" to control of edema in ambulatory congestive failure cases



'Resodec' for sodium removal

'Resodec' will permit many of your ambulatory patients—in the mild or moderately severe stages of congestive failure—to return to more nearly normal living. Because it brings the patient into the compensated state, 'Resodec' usually reduces the hardships that formerly had to be imposed in these cases, i.e., (1) limited activity, (2) rigid sodium restriction, and (3) mercurial injections.

'Resodec' restores sodium balance

Smith, Kline & French Laboratories, Philadelphia

'Resodec'—S.K.F.'s Trademark for their polycarboxylic cation exchange resin

LETTER FROM THE EDITOR

Dear Reader:

There is a time for beginning and a time for letting go. For twenty years I have presided over the editorial destinies of *Modern Medicine*. In 1932 *Modern Medicine* was just an idea in the minds of a handful of dedicated men. They were determined to hasten the dissemination of medical knowledge, to make the significant discoveries of laboratories and the perfected technics of medical centers immediately available to every doctor in the United States, no matter how remote his place of practice might be.

Even then, investigators and clinicians were reporting advances in medical knowledge in such volume that it was impossible for the man in general practice to keep informed. There was a need for a new kind of medical journal with a new approach. It has been my privilege to have a part in giving such a journal to the medical profession.

The way was uncharted. A nation-wide organization of leaders in every medical field had to be built so that nothing of practical importance in the diagnosis and treatment of disease would be overlooked. A new method of medical reporting had to be evolved, and a corps of science writers recruited and trained in journalistic technics peculiar to the needs of the most critical readers in the world, the doctors of America.

Although great strides have been made, the work is far from done. For more than fifty years I have been in general practice. Today, more than ever, *Modern Medicine* is a necessity to me. During the time I have been editor of this journal I have done my best to make it a necessity to you.

I have enjoyed every minute devoted to my editorial duties. But the flesh is weak, and the ravages of time have taken their toll. I welcome, therefore, the less demanding duties of Editor Emeritus.

Before I step into the ranks of the elder statesmen, however, I want to introduce you to your new Editor-in-Chief, Dr. Walter C. Alvarez.

Dr. Alvarez is the embodiment of the well-rounded medical man, active as practitioner, investigator, teacher, and writer—the four traditional roles of the doctor.

After completing his studies at Cooper Medical College, which later became a part of Stanford University, Dr. Alvarez for three years was engaged in general practice at Cananea, Mexico. From 1910 to 1925 he practiced internal medicine in San Francisco. In 1913 he did research work in intestinal physiology with Dr. Cannon at Harvard. From 1915 onward he taught medicine and did research at the University of California.

In 1926 the Mayos brought Dr. Alvarez to the Mayo Clinic where he had a great opportunity for his clinical and physiologic investigation. When he left the Mayo Clinic a year ago he was a Senior Consultant in Medicine and a Professor of Medicine under the Mayo Foundation of the University of Minnesota. He now practices in Chicago and is a Professorial Lecturer at the University of Illinois Medical School.

Dr. Alvarez is an active member of many scientific societies and a past president of the American Gastroenterological Association. For years he was editor of the *American Journal of Digestive Diseases* and later of *Gastroenterology*, and *GP*. In each of these positions he pioneered simplicity and clarity of expression in medical papers.

These qualities are preeminent in Dr. Alvarez' own writing, which comprises several books and more than 800 articles published in scientific journals. A characteristic of Dr. Alvarez' work is the emphasis on common sense and practicability.

Few indeed are the medical men with the range of interests and the journalistic ability of our new Editor-in-Chief. Under his leadership, *Modern Medicine* will become ever more useful to its readers in helping them give better service to their patients.

Dr. Alvarez' association with *Modern Medicine* will be, I am sure, the most interesting and satisfying of his distinguished career.

EDITOR EMERITUS

Correspondence

Communications from the readers of MODERN MEDICINE *are always welcome. Address communications to The Editors of* MODERN MEDICINE, *84 South 10th St., Minneapolis 3, Minn.*

Modified Cotte Operation

TO THE EDITORS: After reading the report on sympathectomy for menstrual pain by Dr. Paavo Vara of Helsinki (*Modern Medicine,* June 15, 1951, p. 82) I thought you might be interested in a modification of Cotte's operation to obtain complete ablation of the superior hypogastric plexus (*Tr. Am. A. Obstetricians, Gynecologists, Abdominal Surgeons* 61:60-63, 1950). The purpose of the modification is to prevent regeneration of the plexus between cut ends.

When dissection is complete and the crushed ends of the nerve bundle are transfixed and tied, the proximal stump is held forward by a hemostat or by the ends of a transfixion suture which is left long, and closure of the peritoneum is begun at the upper end. A No. 00 plain catgut suture doubled firmly closes the peritoneum around the upper stump. A transfixion stitch is then passed through the peritoneum and stump at the point of emergence, and the perineal closure continued with a running stitch. Ends of the nerve fibers of the proximal stump now lie in the abdominal cavity. The lower stump is buried behind the peritoneum.

The actual fact of regeneration of the superior hypogastric plexus following resection has not yet, to my knowledge, been reported in the literature, but regeneration of resected sympathetic nerve fibers elsewhere in the body has been noted.

FREDERICK S. WETHERELL, M.D.
Syracuse

One Possibility Overlooked

TO THE EDITORS: I have read the second question in the June 1, 1951 issue of *Modern Medicine* and your answer. I believe that an important omission was made in the list of possibilities.

In an obese 21-year-old girl who hopes to be a nurse and who has had 60 abscesses in numerous areas one should consider a self-inflicted origin. This is especially so when only two cultures were positive, and not all required drainage.

The situation has been well discussed by Dr. Frank Meleney of New York in *Arizona Medicine* for November 1949. He analyzes a case, and mentions others. They all fall into a similar pattern.

WILLIAM H. OATWAY, JR.
Altadena, Calif.

A Doctor's Lament

TO THE EDITORS: I have just spent two hours completing a medical VA form and I consider that twenty minutes would have been sufficient

These three manifestations occur
so frequently in gastrointestinal dysfunctions
that it was logical for Maltbie Laboratories
to combine in a single tablet, Lusyn, three
therapeutic agents most effective in the relief
of the syndrome—homatropine methylbromide,
phenobarbital and alukalin (activated kaolin).

a 3-pronged attack on gastrointestinal spasticity, hyperacidity, and psychosomatic disturbances.

- Lusyn relieves smooth muscle spasm arising from local tissue injury or psychosomatic disturbance. Homatropine methylbromide, the antispasmodic in Lusyn, is only 1/54 as toxic as atropine.
- In peptic ulcer, Lusyn neutralizes excess acid and spreads a fine, soothing, protective film over the inflamed mucosa.
- Lusyn takes the edge off "nervous tension" which is frequently associated with muscle spasm.

Formula: Homatropine methylbromide . . . 1/24 gr., Phenobarbital . . . 1/8 gr., Alukalin (activated Kaolin) . . . 5 gr. ***Dosage:*** Usually, 1 or 2 Lusyn tablets before meals.

Lusyn®

antispasmodic . . . sedative . . . antacid adsorbent

Maltbie Laboratories, Inc., Newark 1, New Jersey

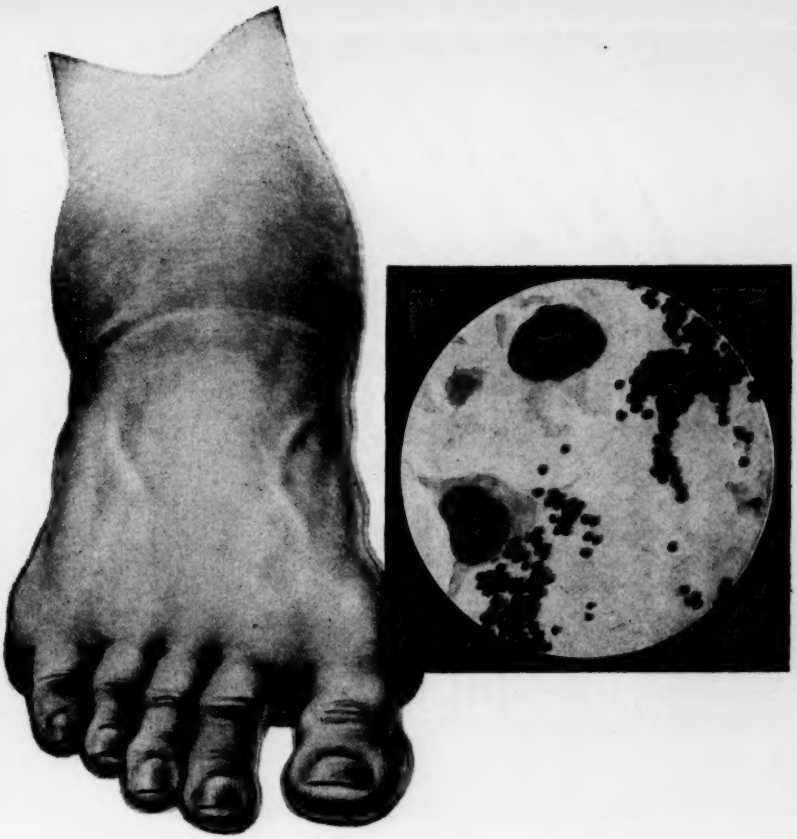
time to have done all pertinent points in this case. The remainder of the time was spent trying to satisfy some bureaucrat's idea of what the busy doctor should do while the patients who pay his living expenses twiddle their thumbs.

In my opinion, it is none of the examiner's business what the examinee did the past two or five years, whom he worked for, or how much he collected, and generally it is equally as little of the VA's business. Rarely, if ever, is it of any value to the VA office workers to know the changes in pulse, respiration, and blood pressure in the five positions and conditions required in the latest form 10-2545, especially when the complaint is a chronic sore throat and, more especially, when the VA has already ordered an examination by a specialist in ENT. Some laboratory work might have been more pertinent.

I would gladly be stricken from the list of VA examiners until the examiner is given credit for enough intelligence to recognize what part of the examinee's carcass is ill. I would further like to suggest that all veterans who must have form 10-2545 filled in periodically be supplied with a diary, and a manual of instructions for filling it in as they go, so that they will have it handy for future refills of the ever more complex forms. And it might not be much trouble to call the poor fellows to one of the $10,000 per room VA hospitals where the dope can be rerecorded on the proper forms.

ROY O. YEATTS, M.D.
Hardin, Mont.

P.S. My secretary had already worked two hours overtime, so please excuse the typing.



in acute brucellosis: "excellent clinical responses" were recorded in 16 cases Terramycin-treated. Average time for defervescence was 3.4 days. Authors conclude that "terramycin is excellent in alleviating the clinical signs and symptoms of the acute disease."

Killough, J. H.; Magill, G. B., and Smith, R. C.: J.A.M.A. *145*:533 (Feb. 24) 1951.

CRYSTALLINE TERRAMYCIN HYDROCHLORIDE *available as* ***Capsules, Elixir, Oral Drops, Intravenous, Ophthalmic Ointment, Ophthalmic Solution.***

ANTIBIOTIC DIVISION Pfizer **CHAS. PFIZER & CO., INC.,** *Brooklyn 6, N.Y.*

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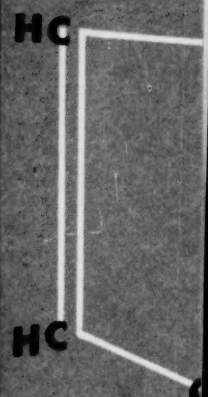
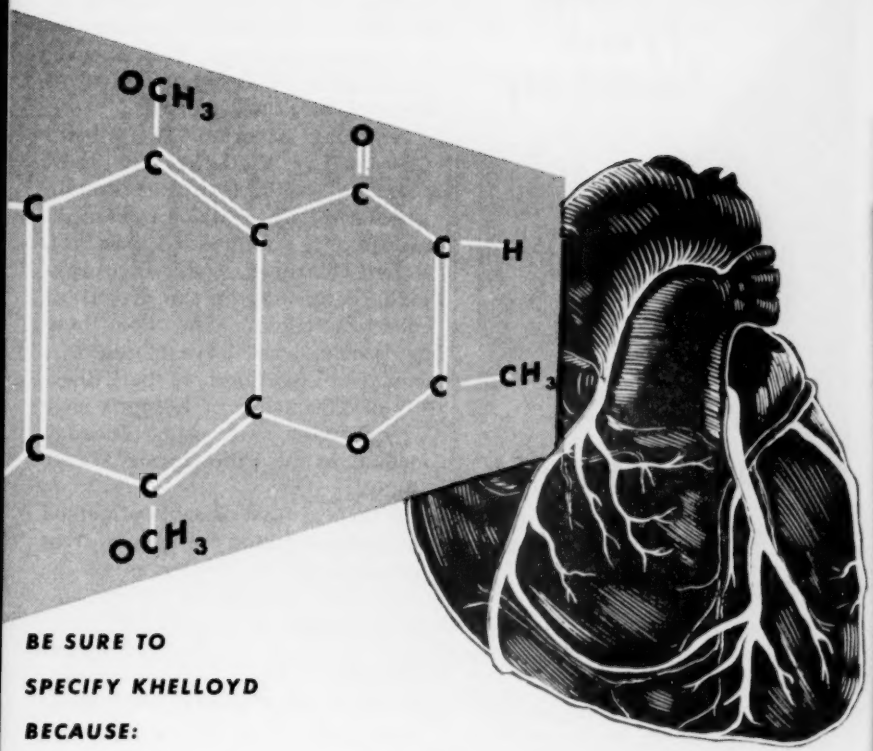


• Additional clinical studies show that crystalline khellin . . . the pure active principle . . . is essential for best results in angina pectoris.

With ***KHELLOYD,*** therefore, you can expect the therapeutic response of the full dosage of pure crystalline khellin . . . selective coronary vasodilatation with a resulting increase in exercise tolerance and lessened frequency and severity of angina attacks.



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KHELLOYD tablets are scored to permit the accurate adjustment of maintenance dosage essential to successful khellin therapy.

Suggested maintenance dose: two KHELLOYD tablets daily, adjusted to the needs of the individual patient.

Let us send you complete bibliography and literature.

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Antigen for Asthma

TO THE EDITORS: Early in 1948 I learned of a substance known as polygen, a composition prepared by a medical technologist, G. S. Zuccala, Huntington, N.Y., for use in treatment of bronchial asthma.

A young physician, Dr. Alberto Carradori of Castiglioncello, Italy, connected with United Hospitals, Lakehorn, Italy, of which I am medical director, informed me that Prof. Robert Tiffeneau, Hotel Dieu Hospital, Paris, was in the process of collecting clinical data from hundreds of patients. I later found that Prof. Fiero Sangiorgi, of the University of Milan, one of Europe's leading allergists, was using Zuccala's method in the Salice-Terme Allergy Clinic.

I learned that Zuccala's method consisted of taking the sputum from asthmatic patients during an asthma attack and making an antigen. At first I thought this was nothing more than the usual vaccines, but I later found that Zuccala takes the sputum, places it in a phenol red lactose broth, plus pure honey, incubates

(Continued on page 30)

"The way the world situation is, I've lost my appetite."

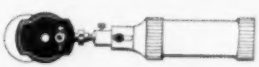
Effective against many
bacterial and rickettsial infections, as well as
certain protozoal and large viral diseases.

AUREOMYCIN

Hydrochloride Crystalline

Lederle

The Ophthalmologist now possesses in aureomycin a therapeutic agent effective against many infections of the eye, whether caused by bacteria or by large viruses. A half per cent solution is nonirritant to the conjunctiva, so that aureomycin may be given locally, systemically, or in both ways. It has been found of value in most types of conjunctivitis, as well as in dendritic keratitis and uveitis; and is of importance in the treatment of the acute stage of trachoma. Aureomycin is invaluable in both operative and nonoperative ophthalmology.



Packages

Capsules: Bottles of 25 and 100, 50 mg. each capsule. Bottles of 16 and 100, 250 mg. each capsule.
Ophthalmic: Vials of 25 mg. with dropper, solution prepared by adding 5 cc. distilled water.

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AMERICAN Cyanamid COMPANY
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objection overruled!

gastric interference ruled out in fast-acting antacid therapy

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Caroid,® the potent proteolytic enzyme in Al-Caroid, digests proteins vigorously in both acid and alkali media. Protein digestion continues without interruption while fast and slow acting alkalies in Al-Caroid are producing a rapid, sustained rise in pH values.

For quick, positive relief of indigestion, heartburn, flatulence, morning sickness of pregnancy, and other symptoms resulting from hyperacidity and impaired protein digestion —prescribe Al-Caroid.

TABLETS . . . in bottles of 20, 50, 100, 500 and 1000.

POWDER . . . in 2 oz., 4 oz., and 1 lb. packages.

AL-CAROID® | *Antacid-Digestant*

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for injections without objections

VIM needles are made of "L
stainless steel, which, unlike many
of steel, can be heat-treated a
given a true spring temper.
Consequently, VIM needles take
and *hold* a razor edge of lasting keenness. That's why VIM injections are easy to give, and — just as important — easy to *take*.

S P E C I F Y

VIM

Trade Mark Reg. U.S. Pat. Off.

hypodermic needles and syringes / *Available through your surgical supply dealer*

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For Soothing Sustained Mild Sedation . . .

ORGAPHEN

TRADEMARK

ELIXIR ORGANIDIN® and PHENOBARBITAL

Sedation may be:	SOOTHING SUSTAINED MILD	OR	QUICK TRANSIENT PROFOUND

ORGAPHEN sedation sets in gradually, is soothing, *mild* and particularly well suited for *prolonged* action, especially in hypertensive and older patients, and for the patient "on edge," requiring continuous treatment.

Less Phenobarbital Necessary

ORGAPHEN includes only 12 mg. (1/5 grain) of phenobarbital in each 4-cc. teaspoonful while the standard elixir of phenobarbital contains ¼ grain. Yet, "One of the most striking observations noted was a definite clinical synergism of the phenobarbital sedation" by

the organically bound iodine, apparently "equivalent in effect to about twice (24 mg.) the amount of phenobarbital alone." Thus adequate sedation with ORGAPHEN is obtained with relatively little phenobarbital.

Marked Symptomatic Relief

A recent study by Slaughter, Grover, and Hawkins*—indicates that ORGAPHEN is a unique elixir of organically bound iodine and phenobarbital, has a particularly salutary effect on symptoms associated with hypertension, and exerts a distinct hypotensive action as well. Toxic effects are negligible. The authors note that maximal results appear to be obtained after about two months continuous use of ORGAPHEN, and they add that, "it has been extremely difficult to withdraw any of these patients because they obtained such excellent relief from the preparation."

*Report to American Therapeutic Society, Boston, 1950

For the Person "On Edge"

For your next hypertensive patient (and in hyperthyroidism, arteriosclerosis and endocrine imbalance as well) prescribe ORGAPHEN, and observe its low effective dose and excellent effect on symptoms. ORGAPHEN is supplied in pint bottles.

Samples and literature on request

HENRY K. WAMPOLE & CO.
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PHILADELPHIA 23, PA.

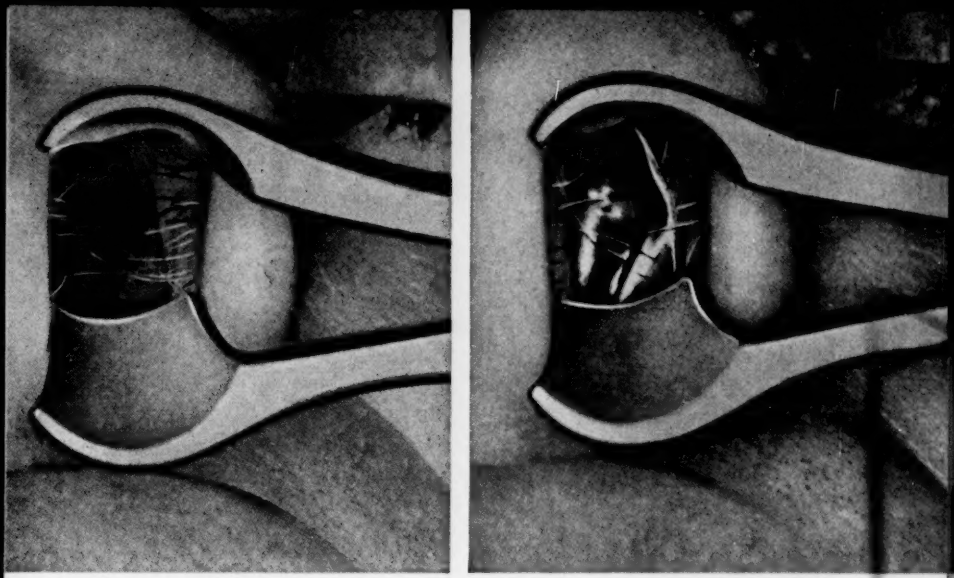
it from seventy-two to eighty-four hours, then inactivates, filters, and sterilizes it. With this filtrated substance, Zuccala makes different dilutions from 1:10 to 1:50 with a beef heart antigen, the same as that used in Wassermann tests, and runs a complement fixation test.

The smallest amount of filtrate which gives a complete complement fixation, he calls a unit. Double amounts of this unit (2 units) are used in the first injection of the patient. At the time I learned about this mixture it meant little to me.

However, after being assured of the safety of the drug, I decided to try it for some of my very stubborn cases. I ordered first trials late in 1948 in the hospital clinics under my personal supervision. The first injection given to the patient was 0.2 cc. instead of the 0.4 cc. Zuccala's instructions called for; the second day, 0.4 cc.; the fourth day, 0.6 cc.; the sixth day, 0.8 cc.; and the tenth day, 1 cc. Some patients tolerated this series of injections, others I was obliged to keep on the same dose for several days to a week longer. The injections were given to the patient subcutaneously. I later noticed that intramuscular injections caused less annoyance to the patient and much less pain.

In order to evaluate this new American product, it was decided that Dr. Carradori, who was willing to assist me, would give 100 patients who had bronchial asthma the prescribed old treatment or whatever treatment was available in Italy at the time and that I would take 100 cases of the same affliction and use the new Zuccala method.

To my surprise, in April 1949, I read a lengthy article by Dr. N.



Before intranasal administration of Paredrine-Sulfathiazole Suspension.

After instillation of the Suspension in the Proetz—or head-low—position.

(*Photographs slightly enlarged.*)

These photographs show the advantages of a SUSPENSION in treating INTRANASAL INFECTIONS

Paredrine-Sulfathiazole Suspension—unlike antibacterial agents in *solution*—does not quickly wash away. It clings to infected areas for hours—assuring prolonged bacteriostasis. When instilled in the Proetz position, it reaches *all* of the sinal ostia, thus helping to prevent sinusitis.

Paredrine-Sulfathiazole Suspension is the most widely prescribed sulfonamide nose drop. No instances of sensitivity to its use have ever been reported.

Smith, Kline & French Laboratories, Philadelphia

Paredrine-Sulfathiazole Suspension

vasoconstriction in minutes . . . bacteriostasis for hours

'Paredrine' T.M. Reg. U.S. Pat. Off.

SHIELD OF PROTECTION

IN SEVERE BRONCHIAL ASTHMA

Even when customary therapeutic measures have failed in the management of severe bronchial asthma, it is possible to block bronchial muscle spasm with ACTHAR therapy. Subjective relief may be initiated within hours; remissions with markedly improved breathing capacity and circulatory recovery may be maintained for many months. ACTHAR protects the human organism by protecting the individual cells.

IN SEVERE HAY FEVER

There are unfortunate hay fever victims who fail to respond to desensitization, antihistaminics and other customary forms of treatment. In such patients, institution of ACTHAR therapy shows great promise in relieving the harassing and frequently incapacitating symptoms, even in the presence of high pollen counts.

ACTHAR is available in vials of 10, 15, 25 and 40 I.U. (mg.). The Armour Standard of ACTHAR is now accepted as the International Unit; 1 International Unit is identical with 1 milligram of ACTHAR.

ACTHAR

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PHYSIOLOGIC THERAPEUTICS THROUGH BIORESEARCH

Agadjanianetz in the *Journal de medicine de Paris* reporting cases treated by the use of Zuccala polygen. I was encouraged by this article and continued my work with greater enthusiasm.

By October 1949, a textbook, *Principi di allergia clinic,* by Prof. Sangiorgi was published which mentioned the Zuccala work but called the polygen "Z-49" (for Zuccala, who originated the idea, and '49 for the year his work was first recognized). The account reported that 75% of the patients treated by Zuccala's method were greatly relieved and some even completely cured. Zuccala's method was pronounced safe and efficient.

I have not been able to formulate any specific theory, but the fact remains that Z-49 has many advantages over the old treatments and is definitely safe to use.

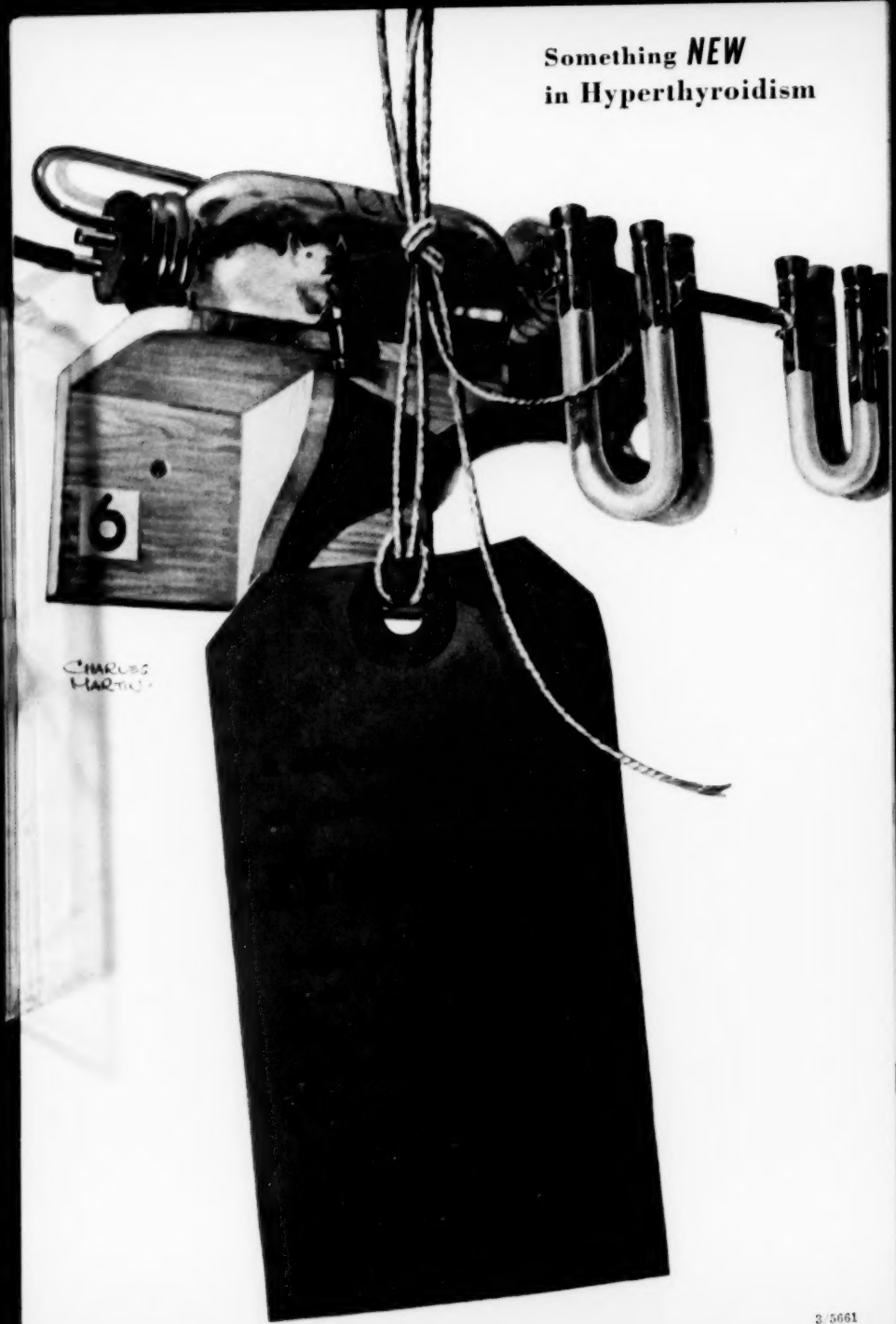
In 1950 I started to gather my clinical data and make comparisons with Dr. Carradori. About 86.8% of the patients treated with Z-49 were greatly relieved and, in many cases, cured, so far without recurrences. The balance of the cases varied in the degree of improvement.

Of the 100 cases, 18 were the worst I have ever treated in many years of practice. While the patients have responded rather slowly even with Z-49, there is a definite 65% improvement. I will continue to treat these rare cases for a considerable length of time.

Dr. Carradori reported 42.4% improvement and some cures, using the available methods now known and employing all precautions, eliminating pets, furs, dusts, and so forth, and applying all types of scratch tests. These proved very an-


5
6
Something NEW in Hyperthyroidism
7

Something *NEW*
in Hyperthyroidism



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noying to the patients and of little benefit.

Prof. Sangiorgi, in January 1950, reported about 21 stubborn cases treated with Z-49. I also learned that Dr. L. A. Terman of Chicago; Dr. G. Knight of Santa Barbara, Calif.; Dr. C. E. Carter of Melville, N.Y.; Dr. J. P. Foland of Larchmont, N.Y.; Dr. Joseph C. Paterno of Brooklyn; Dr. Mario Capitumino of Torin, Italy; Dr. John J. Stewart of Johannesburg, South Africa; Dr. Y. Barre of Choumont, France; Dr. Carl V. Granger of Huntington Station, N.Y.; Dr. J. J. Denies of Bogotá, Columbia; and Dr. Indelicato, Brooklyn are collecting data for study.

We are happy to learn here in Europe that the American scientists are working incessantly to bring new things in the field of medicine to the Old World. I fully believe that if more time and thought were given to the Zuccala conception of the titrating of organic substances to be injected into the human body by means of complement fixation tests, a field as yet unknown to the medical world might be opened.

The Z-49 is not a commercial product but is made only upon the recommendation of the attending physician. It answers the plea "Let medicine be in the hands of the M.D." Our hospitals and our clinics are happy to cooperate and will further the research of Z-49.

PROF. STELIO STICOTTI
Lakehorn, Italy

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Cooks in 10 seconds

Cooks in 5 minutes

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Instant Ralston and Hot Ralston are useful in preventive geriatrics too!

"must be highly recommended for the rapidity of its healing action"[1]

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infants with diaper rash
"were completely cured by modified cod liver oil ointment (Desitin), in from two to seven days". The clinical report[1] notes "rapid healing, without exception, of the most excoriated buttocks."

protective • soothing • healing
in diaper rash, exanthema
intertrigo, chafing, irritation
(due to urine, excrement, chemicals or friction)

DESITIN OINTMENT is a self-sterilizing blend of high grade, crude Norwegian cod liver oil (with its unsaturated fatty acids and high potency vitamins A and D in proper ratio for maximum efficacy), zinc oxide, talcum, petrolatum, and lanolin. Does not liquefy at body temperature and is not decomposed or washed away by secretions, exudate, urine or excrements. Dressings easily applied and painlessly removed. Tubes of 1 oz., 2 oz., 4 oz., and 1 lb. jars.

write for samples and reprint

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1. Behrman, H. T., Combes, F. C., Bobroff, A., and Leviticus, R.: Ind. Med. & Surg. 18:512, 1949.

Questions & Answers

All questions received will be answered by letter directed to the petitioner; questions chosen for publication will appear with the physician's name deleted. Address all inquiries to the Editorial Department, MODERN MEDICINE, *84 South Tenth Street, Minneapolis 3, Minnesota.*

QUESTION: A diagnosis of general paresis of unknown duration was made for a man three years ago, at which time the spinal fluid showed a positive flocculation test and a paretic curve. Total protein was 40 mg. The patient was given twenty-eight hours of fever therapy, but had a severe reaction, so was later given three months of therapy with mapharsen and bismuth. Incomplete courses of these preparations have since been repeated about every four months. He is now symptom free except for tinnitus. His spinal fluid shows 20 mg. total protein with negative flocculation and a normal curve. Is further treatment indicated and, if so, should chemotherapy be continued or would a switch to penicillin be advisable?

M.D., Nebraska

ANSWER: *By Consultant in Syphilology.* Omission of information as to the cell count at each spinal fluid examination is unfortunate, since the degree of activity of the inflammatory process could thus be determined. However, from the results of the last spinal fluid examination, one can conclude that the condition is well controlled if not completely treated. For certainty, 12,000,000 units of procaine penicillin in divided doses with aluminum monostearate may be given two or three times weekly for a period of four weeks.

Tinnitus is a rare symptom of syphilis and is difficult to explain with a normal spinal fluid. A search should be made for other possible causes.

Conceivably the condition might result from scar tissue in the eighth cranial nerve or at its departure from the brain, because of meningeal reaction.

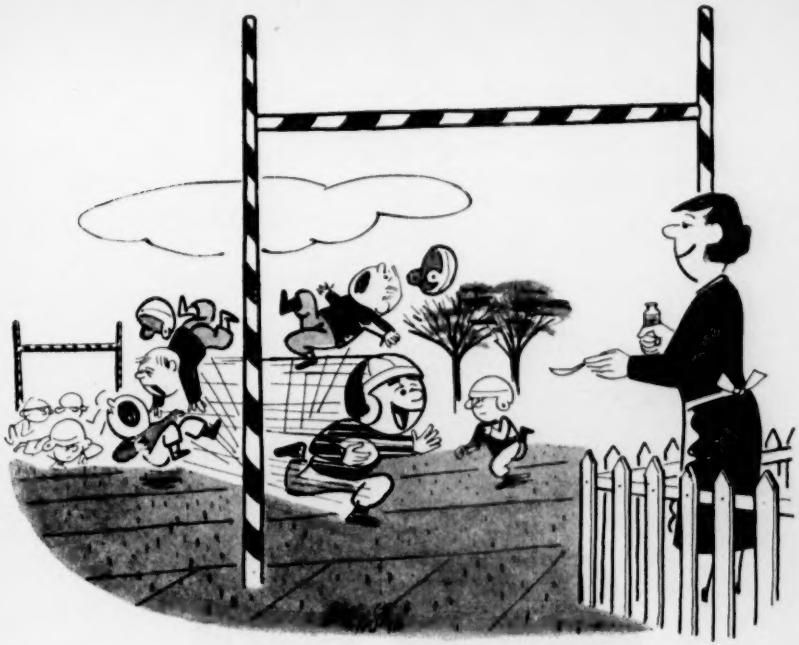
QUESTION: If diabetes mellitus can be controlled by diet alone, is insulin necessary? Will insulin alone cure the early fatty liver in such a case? What is the clinical value of hypotropic factors? Why does the public associate diabetes with abstinence from alcohol?

M.D., Cairo, Egypt

ANSWER: *By Consultant in Internal Medicine.* Mild diabetes should always be treated by diet alone. Insulin is not necessary or advisable in such cases unless some acute complication, such as infection, arises and control is lost. Then insulin therapy is definitely indicated. Mild diabetes very frequently occurs in obese individuals and can be controlled by a reduction in caloric intake, resulting in loss of body weight.

In diabetes, one of the first changes taking place in the pancreas is a hydropic degeneration of the islets of Langerhans. On the basis of

(Continued on page 44)



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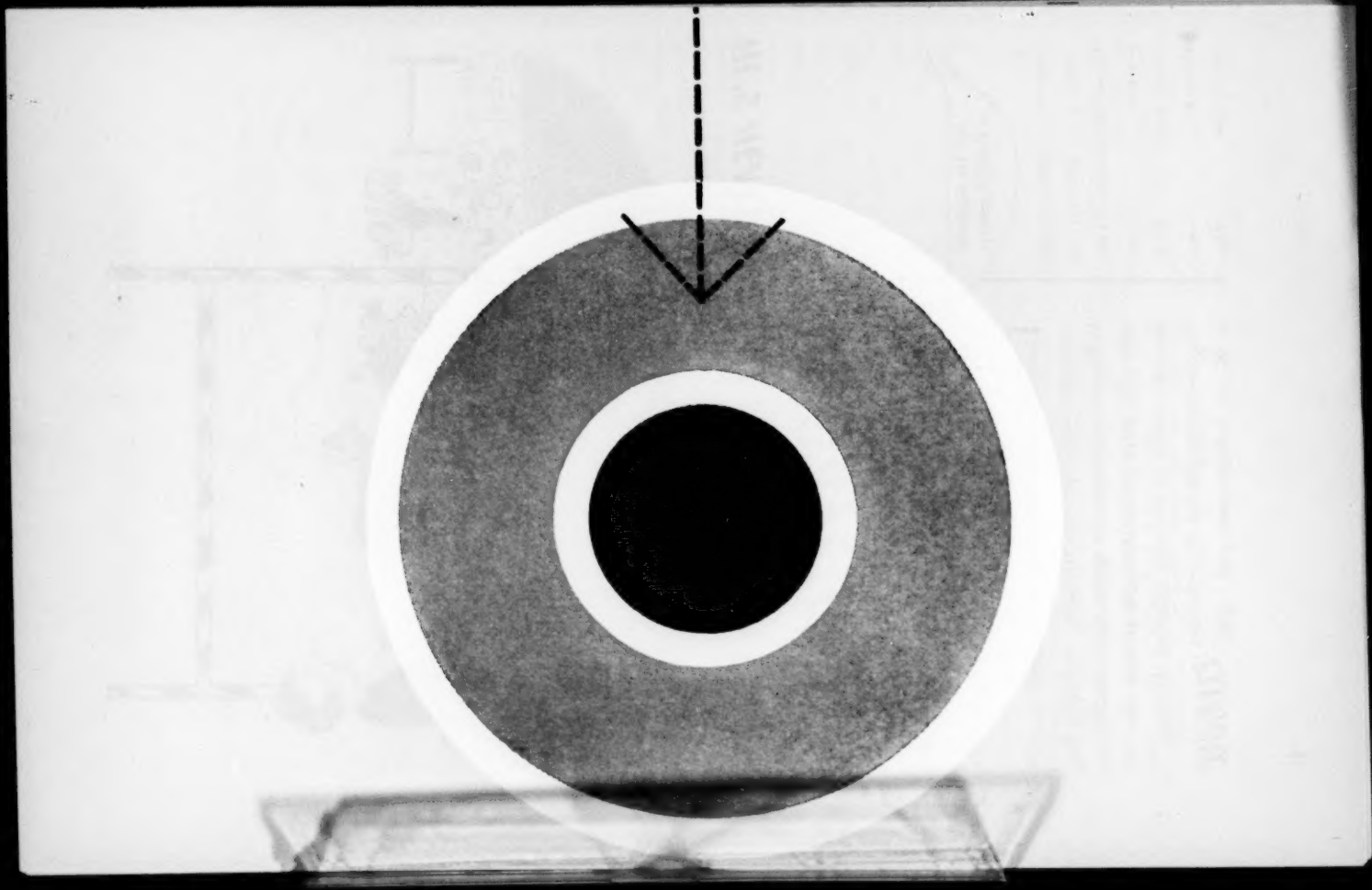
Each 5-cc. teaspoonful of VI-DAYLIN contains:

Vitamin A	3000 U.S.P. units
Vitamin D	800 U.S.P. units
Thiamine Hydrochloride	1.5 mg.
Riboflavin	1.2 mg.
Ascorbic Acid	40 mg.
Vitamin B_{12}	1 mcg.
Nicotinamide	10 mg.

Looks like yellow honey, tastes like lemon candy, contains seven important vitamins—including B_{12}. VI-DAYLIN is delicious by spoon, mixes readily with milk, juice or cereal. Stable at room temperature, leaves no resistant stains on clothing. At prescription pharmacies in bottles of 90 cc., 8 fluidounces and 1 pint.

Abbott



experimental work, hydropic degeneration probably occurs in nearly all cases of diabetes at some time or other. Being an early change, manifestations are rarely found in human beings, although definitely demonstrated in experimental animals. Considerable evidence exists that hydropically degenerated cells can be redeemed and all manifestations of diabetes overcome, so that the situation at this stage of damage is remedial.

Fatty livers develop in diabetic animals if maintained on a diet deficient in choline and without insulin. Similarly, fatty deposits occur in livers of untreated diabetics, particularly children. These deposits disappear when the diabetes is controlled adequately, especially when choline or one of the precursors is given. The fatty deposits that take place in the liver with diabetes are reversible. The specific question is, of course, whether a patient with mild diabetes who has been controlled for three years by diet alone can be cured of the early fatty changes. If such fatty conditions have already been established, the control of diabetes, whether by diet alone or by diet and insulin, should certainly be remedial.

The lipotropic factors—substances that prevent or remove an accumulation of fat in the liver—have considerable clinical value. Seemingly a misleading pathologic condition exists. If raw pancreas or lecithin, choline, or betaine is not supplied to depancreatized dogs with diabetes, the diabetic condition is improved as far as glycosuria is concerned. These animals eventually die with fat in the liver, but if lecithin or choline is supplied before death, the fat disappears and the severity of

WILHELM KONRAD RÖNTGEN

(1845-1923)

IN 1895, PROFESSOR WILHELM KONRAD RÖNTGEN MADE ONE OF THE GREAT DISCOVERIES IN THE HISTORY OF SCIENCE. ON NOVEMBER 8th, AT THE UNIVERSITY OF WÜRZBURG, BAVARIA, GERMANY, RÖNTGEN DISCOVERED THE

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the diabetes apparently increases. If insulin is provided at the same time, both glycosuria and fatty liver are controlled. Further, if a depancreatized dog is maintained with insulin and without choline or other lipotropic substances, the amount of all lipid constituents in the blood is reduced. The livers of these animals greatly enlarge and fill with fat. Hence, from an experimental standpoint, both insulin and choline or other lipotropics are indicated for the depancreatized animal.

There seems to be some justification for alcoholic abstinence in the diabetic. Neuritis may be increased in the diabetic by the use of alcohol. Moreover, a patient with an insulin reaction is in danger of being considered under the influence of alcohol if he has an odor of alcohol on his breath.

QUESTION: What treatment would you suggest for a 20-year-old man who, over a period of years, has had repeated severe episodes of prostration when exposed to heat and exertion? The attacks last several hours and, once started, cannot be aborted. An attack begins with a bilateral frontotemporal headache and flushing, followed by nausea, vomiting, abdominal cramps, profuse perspiration, and chills.
M.D., California

ANSWER: *By Consultant in Neurology.* A specific diagnosis is not possible from this history, but the periodicity of the episodes suggests a seizure pattern. An electroencephalogram should be made, and a neurologic examination given to determine whether the patient is suffering from a central nervous system convulsive disease precipitated by heat and exertion. If so, anticonvulsive medication might well stop the spells.

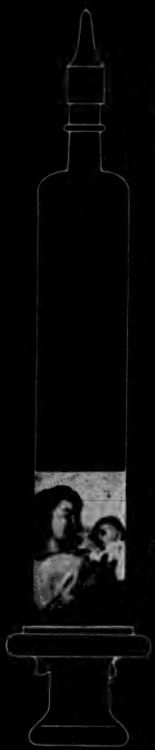
PREVENT

Postpartum Hemorrhage with KOAGAMIN

An aqueous solution of oxalic and malonic acids for parenteral use in 10 cc. diaphragm-stoppered vials

Dieke and Greenhill point out that it is advisable to stop all postpartum hemorrhaging as soon as possible since the patient's constitution is an unknown factor and thinned blood loses its clotting power.

Routine use of KOAGAMIN as a preventive against hemorrhage in labor is suggested. KOAGAMIN action is usually clocked in minutes—compared with vitamin K useful only where prolonged prothrombin time is involved. In these cases KOAGAMIN is recommended in addition to effect faster control.



Dieke, Dieke & Greenhill, Principles of Obstetrics, 4th Ed., p. 803, W. B. Saunders Co. 1943

THERAPEUTICALLY KOAGAMIN is effective in many hemorrhagic conditions prophylactically and therapeutically

PREOPERATIVELY KOAGAMIN minimizes oozing, assures an uncluttered field of operation

POSTOPERATIVELY KOAGAMIN controls secondary bleeding

Write for comprehensive dosage chart and literature

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"...there is the fallacy, still prevailing, that gout is a rare disease..."†

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†Finn, N., Brit. M. J. (Nov. 20) 1948

THE "OVER 40" ARTHRITIC

Many a case of painful arthritis in the "over 40" age-group—those most susceptible to gouty arthritis—will respond to Cinbisal.

Cinbisal combines colchicine with salicylate—both effective in producing urate diuresis and relieving arthritic pain. Inclusion of a protective dose of ascorbic acid assures adequate replacement of this essential factor during salicylate therapy.

EACH TABLET CINBISAL CONTAINS:

Colchicine	0.25 mg. (1/250 gr.)
Sodium Salicylate	0.3 Gm. (5 gr.)
Ascorbic Acid	15 mg.

SUGGESTED DOSAGE:

One or two tablets every four hours.

SUPPLIED: Cinbisal is available in bottles of 100 and 1000 tablets (Engestic® coated green).

Samples on request.

CINBISAL*

'McNEIL'

*Trade-Mark of McNeil Laboratories, Inc.

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The most significant effects of **VERATRITE** are circulatory improvement and a new sense of well-being for the patient. Furthermore, Veratrite exhibits a wide range of therapeutic safety and a prolonged length of action without serious side-effects, due to its content of *whole-powdered* veratrum viride, Biologically Standardized.

Supplied: Bottles of 100, 500, 1000 at prescription pharmacies everywhere.

ECONOMY IS AN IMPORTANT ADVANTAGE OF VERATRITE THERAPY

Each VERATRITE Tabule contains:
Veratrum Viride . . . . . 3 Crow Units*
Sodium Nitrite . . . . . 1 grain
Phenobarbital . . . . . ¼ grain
Beginning Dose: 2 tabules t.i.d., after meals.

***Biologically Standardized for toxicity by the Crow Daphnia Magna Assay.**

Veratrite

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Never available before

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- such welcome convenience[1]

in **gentian violet** therapy

for **monilial vaginitis**

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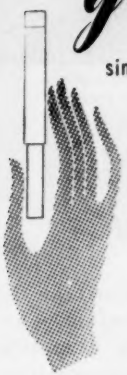

a 2 year study[1] at Margaret Hague Maternity Hospital clearly proved **gentia-jel** a most effective, convenient, safe form of gentian violet. Single-dose disposable applicators deposit **gentia-jel** jelly **inside** vaginal tract with a minimum of staining, soilage, fuss.

Safe, non-irritating, for home use even through late pregnancy.

93% combined cure and improvement...used during the last trimester of pregnancy **gentia-jel** cured 149 (78%) of 191 women with vaginal mycosis...most within 2 weeks. Combined cures and improvement totalled 93% of all cases. Itching, burning and other symptoms were largely controlled within 48 to 72 hours.

Formula: 0.2% gentian violet, 3% lactic acid, 1% acetic acid in a water-soluble polyethylene base.

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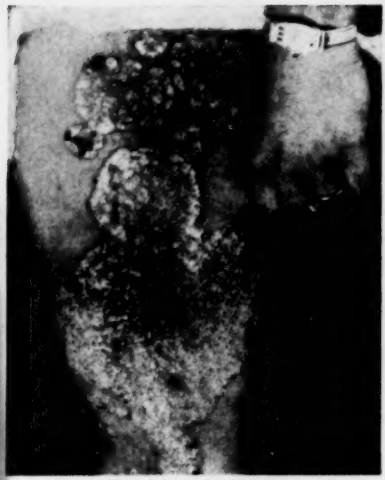
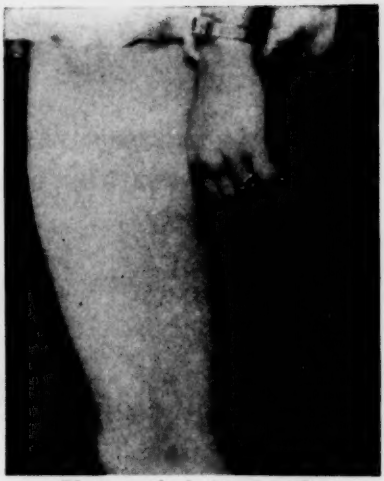
1. Waters, E. G., and Wager, H. P.: Amer. J. Obstet. & Gyn. 60:885, 1950.



Psoriasis—duration 15 years



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The fundamental principles employed in the development of Mazon—careful selection of ingredients, skillful blending for ease of application, absorbability and patient acceptance—promote the successful treatment of obstinate skin conditions.

The distinctive characteristics and therapeutic value of Mazon have been demonstrated clinically for over 25 years. Skin irritations not caused by or associated with systematic or metabolic disease or disorders are usually amenable to treatment with Mazon.

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no half-measures in lipotropic therapy

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Choline* (equivalent to 9.15 Gm. of Choline Dihydrogen Citrate)	3.75 Gm.
Vitamin B_{12} U.S.P.	4.20 mcg.
Inositol	75.00 mg.

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Available in bottles of 16 ounces (473 cc.).

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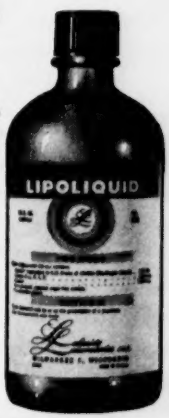

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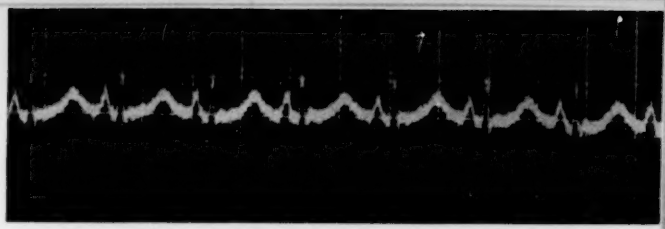
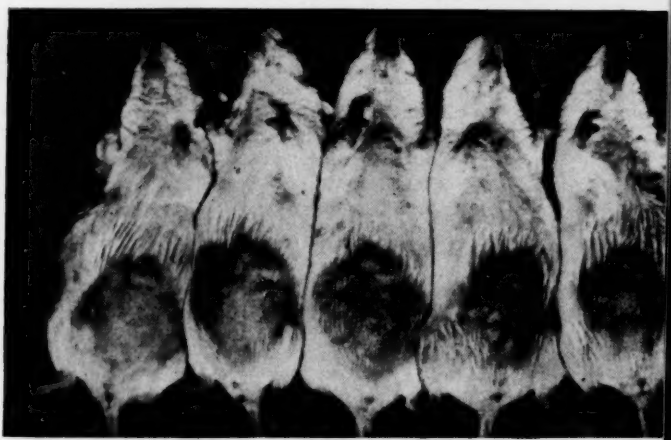
demonstrated in experimental studies:



Thiomerin exhibits less cardiotoxicity than the older diuretics (animal experiments)[1]



Thiomerin produces minimal local tissue destruction (a) to muscle[2] (b) to skin[2]

confirmed by clinical experience:

Diuretic potency at least comparable to that of older preparations and . . . generally less dramatically dehydrating on the first day but more persistent in effect for two or three days.[3]

Minimal local discomfort from the injection.[4]

Advantages: (a) virtually no cardiac toxicity. (b) practically painless when given subcutaneously. (c) equally or more effective than other mercurial diuretics.[5]

Thiomerin may be given subcutaneously, or intramuscularly, or intravenously, with a minimum of local or systemic toxicity.

1. Lehman, R. A.: Proc. Soc. Exper. Biol. & Med. 64:428, 1947.
2. Lehman, R. A., Taube, H., and King, E. E.: Proc. Soc. Exper. Biol. & Med. 71:1, 1949.
3. Herrmann, G. R., et al.: Texas State J. Med. 44:79, 1949.
4. Stewart, H. J., et al.: Circulation 1:502, 1950.
5. Feinberg, A. R., et al.: Am. J. M. Sc. 218:298, 1949.

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Book Chapter

Laboratory Diagnosis of Thyroid Disease*

LOUIS J. SOFFER, M.D.†

From a chapter of the book, Diseases of the Endocrine Glands

THE recognition of thyroid disease is primarily the function of the clinician, not of the laboratory technician. No single test or battery of tests can completely replace clinical judgment either in the recognition of thyroid dysfunction or concerning the progress of the disease.

None of the tests available today can unequivocally determine the presence or absence of thyroid disease, but they supplement the clinical impression and, in doubtful instances, lend weight in the proper diagnostic direction. The following are the tests available for determination of the status of thyroid function: [1] basal metabolic rate, [2] serum cholesterol, [3] protein-bound iodine of serum, [4] thyroid uptake of radioactive iodine, [5] urinary excretion of radioactive iodine, [6] magnesium partition studies, [7] creatine tolerance test, and [8] therapeutic response to iodine.

Basal Metabolic Rate

If we accept −10 to +15% as the normal range for the basal metabolic rate, we find that the basal metabolic rate is elevated in most cases of hyperthyroidism and reduced in most instances of hypothyroidism and myxedema. However, normal basal metabolic rates are found with clinically frank hyper-

* Excerpts from a chapter of the book, *Diseases of the Endocrine Glands*, 1,075 pages. Published by Lea & Febiger, Philadelphia, 1951. $15.

† Head of the Endocrine Research Laboratory and Clinic, Mount Sinai Hospital, New York City.

thyroidism and even more frequently when Graves's disease is masked or borderline. Similarly, moderately elevated basal metabolic rates may be encountered in illnesses and clinical states unrelated to thyroid disease. Finally, technical errors, a hazard inherent in all laboratory procedures, may distort the results.

Fever, dyspnea caused by pulmonary or cardiac disease, severe anemia, leukemia, Hodgkin's disease, polycythemia, lymphosarcoma, coarctation of the aorta, aortic stenosis, essential hypertension, and tremor from various causes are some of the clinical states which *may* yield abnormally elevated readings. Undue effort before the test, an inadequate postprandial period, anxiety, and various subjective factors may influence the rate.

The reasons for the normal results obtained in cases of proved hyperthyroidism are for the greater part obscure. One factor is the level of the patient's basal metabolic rate before the onset of the thyrotoxicosis. An individual whose rate prior to the onset was −15% or less may, with the development of a relatively mild degree of thyrotoxicosis, have an increase only slightly beyond the accepted normal range, but which still constitutes a considerable increase *for this particular patient.*

The severity of the disease bears only a rough relationship to the basal metabolic rate. By far and large, however, patients with less severe manifestations and those with pronounced exophthalmos associated with otherwise minor constitutional symptoms show less elevation of the basal metabolic rate. The role of the widespread dietary use of iodized salt may be significant in these discrepant findings. In any event, approximately 5 to 10% of patients with thyrotoxicosis have readings relatively within the normal range.

The results of the basal metabolic rate are much more consistent in myxedema. Although there are other causes for a reduction in the basal metabolic rate, it is unusual not to find a marked lowering in patients who present the classical manifestations of the disease.

The significance of modest reduction in the basal metabolic rate is more obscure. There are so many factors, physiologic and otherwise, which may produce a decrease in the rate that the diagnosis of hypothyroidism on this basis alone, in

the absence of suggestive clinical signs and symptoms, is not justified.

Serum Cholesterol

It has been demonstrated experimentally in both animals and man that total thyroidectomy is followed by the development of hypercholesterolemia. With hyperthyroidism, on the other hand, the serum cholesterol tends to be reduced. These reports in general refer only to trends, but in individual cases of hyperthyroidism, and to a much lesser extent in hypothyroidism, determination of the serum cholesterol concentration is of relatively little value.

Perhaps the major value of the serum cholesterol determination is as a possible guide in therapy. Hurxthal has emphasized the fact that the serum cholesterol level rises during the successful treatment for hyperthyroidism and falls following the therapeutic response in myxedema.

Protein-bound Iodine of Serum

The protein-bound iodine concentration of the serum or plasma is a very sensitive index of thyroid function and reflects the level of the circulating thyroid hormone. The concentration of the total blood iodine, however, is much less satisfactory as a test of thyroid activity, since overlapping is considerable between the pathologic and the ostensibly normal thyroid states.

The normal values for the protein-bound iodine of the serum or plasma vary from 3 to 8 μg. per cent. In normal adults the organic iodine fraction tends to remain relatively constant, although a slight increase does occur during pregnancy.

In the determination and interpretation of the serum protein-bound iodine there are several possible sources of error: [1] The technic is difficult, requiring meticulous technical care and a laboratory free from iodine vapor or fumes. [2] The administration of thyroid extract or thyroxin will cause an increase in the serum concentration of the protein-bound iodine fraction which may erroneously be interpreted as evidence of thyrotoxicosis. [3] The use of organic iodine dyes for roentgenologic visualization causes a marked increase in the protein-bound fraction in the serum. After intravenous pyelog-

raphy, the elevation will subside after several days. Cholecystographic visualization, however, produces an increase that may last for weeks or even many months. When the serum protein-bound iodine fraction is elevated and inconsistent with the clinical picture, the patient should be questioned carefully as to previous administration of dyes for roentgen visualization. [4] Finally, the administration of inorganic iodine or the thiourea compounds to patients with thyrotoxicosis will sometimes, though not always, cause a decrease in the protein-bound iodine.

The results obtained with the use of the serum protein-bound iodine as an index of thyroid activity have been very satisfactory. In general, the serum levels of the protein-bound iodine have been more uniformly elevated with frank thyrotoxicosis than when the clinical picture was less well defined and the existence of hyperthyroidism was definitely established by subsequent events. Comparisons have shown that determination of the serum protein-bound iodine yields a considerably greater percentage of correct results consistent with the clinical impression than does the basal metabolic rate.

The results obtained in myxedema are perhaps even superior to those in thyrotoxicosis. When the clinical picture is equivocal, however, and the basal metabolic rate only moderately reduced, the serum protein-bound iodine may be less helpful.

The determination of the organic iodine fraction is particularly valuable in identifying hypermetabolism without hyperthyroidism. Thus, in the leukemias, chronic infections with fever, chronic pulmonary and cardiac disease, polycythemia vera, Hodgkin's disease, and so on, the elevation of the basal metabolic rate may suggest the existence of thyrotoxicosis but the serum protein-bound iodine is usually well within the normal range.

Uptake and Urinary Excretion of Radioactive Iodine

The radioactive isotope I_{131}, with a half-life of eight days, is the isotope most commonly used in diagnosis of thyroid disease. For purposes of diagnosis, one may measure either uptake of the isotope by the thyroid or excretion in the urine. The isotope may be administered with or without a carrier or inert iodine, generally sodium iodide. Actually, it does

not particularly matter whether a carrier iodine is employed or not.

For diagnosis, the dosage of I_{131} varies from 40 to 100 microcuries; generally the larger amount is employed. When inert iodine is used as carrier, 100 μg. of sodium iodide is administered with the I_{131}. Both the tracer and the inert iodine are given orally either before breakfast or in a nonfasting state.

Measurements of uptake of the radioactive isotope are made twenty-four hours after ingestion of the I_{131}. Uptake is determined by measurement of the gamma rays. A Geiger counter is placed 15 cm. from the neck with the thyroid isthmus as a center and the head and neck in a special holder. The normal value for the uptake of I_{131} by the thyroid twenty-four hours after administration varies from 10 to 35% of the ingested dose, according to Werner and his associates.

An important source of error in this technic is the possible disparity between the size of the gland and the aperture of the Geiger counter. The aperture must be wide enough to include the entire gland, but the size of the gland varies considerably in different patients and its approximate dimensions are not always determinable by palpation. A large counter with an aperture wide enough to cover almost every type of gland is not satisfactory for localization within or measurement of uptake in part of the gland; a small counter placed directly against the neck is desirable for this purpose but is unsatisfactory for over-all uptake measurement.

The major portion of an ingested dose of radioactive iodine is excreted in the urine within the first twenty-four hours, a much smaller amount during the next twenty-four hours, and only minute amounts thereafter. For clinical purposes, the urinary excretion of I_{131} may be measured either twenty-four or forty-eight hours after administration. Both are equally satisfactory.

At our hospital, the urinary excretion of I_{131} is determined at the end of twenty-four hours. A urinary excretion of 20% or less is considered consistent with hyperthyroidism. Urinary excretions between 21 and 35% are regarded as borderline, while values above this level are considered within normal range.

In hyperthyroidism, more radioactive iodine is taken up by the thyroid and less is therefore excreted in the urine. In

hypothyroidism and myxedema, less radioactive iodine is theoretically taken up by the thyroid and more, therefore, excreted in the urine.

In general, the results of the urinary excretion of radioactive iodine in myxedema and hypothyroidism are not satisfactory, since normal values overlap considerably. The urinary excretion of I_{131} above 80% after forty-eight hours may be interpreted as consistent with the diagnosis.

The urinary excretion of I_{131} may be determined both by beta and by gamma ray counts. The gamma counting method is by far the simpler; moreover, distortion of results through mass absorption may be an important factor when beta counts are used.

There are certain important sources of error in the measurement of the urinary excretion of radioactive iodine. If the collection of urine specimens is incomplete, the excretion of the isotope will be proportionately reduced. The urinary excretion is also somewhat influenced by the presence of renal disease or, perhaps, congestive failure. Both uptake and urinary excretion are affected, of course, by previous administration of iodine, antithyroid drugs, thiocyanate, and possibly thyroid extract when it is used over a prolonged period. In all these instances the uptake of radioactive iodine is decreased and the urinary excretion increased.

For diagnosis of hypothyroidism and myxedema, measurements of uptake and of urinary excretion of I_{131} are conceded by most investigators to be unsatisfactory and far less dependable than determination of the protein-bound iodine of the serum. The use of radioactive iodine for diagnosis of hyperthyroidism, however, is very rewarding. As with other tests of thyroid function, the results are better when the clinical picture of thyrotoxicosis is unequivocal.

There is a considerable area of overlapping between normal persons and those with thyroid dysfunction. The interpretation of the results falling in this area is dependent, then, on the clinical picture and the interpretation of other tests. If the patient has definite clinical evidence of thyrotoxicosis, a borderline result is considered consistent with the clinical impression. In the absence of manifestations of thyrotoxicosis, a similar value is interpreted as within the normal range. Unfortunately, a fair percentage of patients suspected of hav-

ing thyrotoxicosis but with an equivocal clinical picture will yield similarly equivocal results with radioactive iodine studies and, indeed, with other tests of thyroid function.

In diagnosis of factitious hyperthyroidism, that is, when the symptoms of hyperthyroidism are induced by exogenous overdosage with thyroid extract or thyroxin, the serum-precipitable iodine and the urinary excretion or uptake of radioactive iodine are particularly helpful. The basal metabolic rate and the serum protein-bound iodine are invariably elevated, but the uptake of radioactive iodine is markedly reduced while the urinary excretion of the isotope is considerably increased even above normal levels. The disparity between the elevated serum protein-bound iodine and the increased urinary excretion or decreased uptake of I_{131} is characteristic of thyrotoxicosis factitia.

The rate of conversion of I_{131} into serum protein-bound radioactive iodine has been used as a test of thyroid function. In general, the conversion rate is increased in hyperthyroidism and reduced in hypothyroidism.

Radioautographic Technics

The fact that functioning thyroid tissue is capable of concentrating iodine can be used to detect the existence or absence of such tissue anywhere in the body. The radioautograph is important in helping to determine whether nodules in a given thyroid are actively functioning. Such activity is manifested by their ability to concentrate radioactive iodine. It is significant that some nodules have little or no function, whereas other nodules are capable of concentrating iodine avidly.

Nodules with excessive function, the so-called "hyperfunctioning adenoma," may occur in patients with or without thyrotoxicosis. In patients with diffuse toxic goiter, adenomatous nodules in the goiter will fail to take up radioactive iodine, while the nonadenomatous tissue will show a considerable avidity. The antithesis of this is also observed.

In general, then, some nodules take up radioactive iodine and others do not. When an adenoma manifests a high uptake, as a rule, the surrounding nonadenomatous tissue is incapable of concentrating radioactive iodine and actually appears atrophic. Similarly, when the surrounding tissue is

functionally active, the adenomas will concentrate the isotope poorly.

Radioactive iodine is not taken up uniformly by the normal thyroid or by the thyroid in diffuse toxic goiter. There is a considerable variability and patchiness in the amount of radioactive iodine that is concentrated in the colloid of the follicles. Adjacent follicles may show extremes in uptake, and the smaller follicles may show heavier concentration of the isotope than the larger ones. Essentially the same situation prevails with multiple adenomatous goiter. The adenomas within a single goiter will collect variable amounts of radioactive iodine, some more and others less than the surrounding nonadenomatous tissue.

Radioautographs are particularly important in carcinoma of the thyroid, since therapy with radioactive iodine is dependent on whether the carcinomatous nodule and its metastases are capable of concentrating the isotope.

As a general rule, malignant tumors containing colloid are the ones most likely to take up radioactive iodine. Carcinomatous tissue at best never concentrates more, and usually concentrates less radioactive iodine than does normal tissue. It would appear that alveolar and follicular, solid, and papillary carcinomas of the thyroid are the ones most readily able to concentrate radioactive iodine.

Creatine Tolerance Test

The thyroid plays a significant role in creatine metabolism. Shaffer, in 1908, was perhaps the first to describe abnormalities in creatine and creatinine metabolism in Graves's disease. He reported the occurrence of a significant creatinuria with a concomitant decrease in the urinary creatinine excretion in patients with this illness.

The absence of spontaneous creatinuria is characteristic of adult myxedema. This observation is not particularly diagnostic, since under normal circumstances, except for the occasional creatinuria observed in females, creatine does not appear in the urine of adults. In children, creatinuria may normally occur and its absence raises the suspicion of hypothyroidism. In both children and adults with myxedema, the administration of thyroid extract results in a relatively

(Continued on page 118)

Etiology of Pernicious Anemia

W. B. CASTLE, M.D.*
Harvard University, Boston

VITAMIN B_{12} and pteroylglutamic and ascorbic acid are required for normal hematopoiesis. Macrocytic anemia may result when one of these substances is lacking.

An interaction between substances found in food (extrinsic factor) and those present in gastric juice (intrinsic factor) is necessary for hematopoiesis. Beef muscle extract, a convenient source of the extrinsic factor, contains vitamin B_{12} and can be given either orally or parenterally. When administered by parenteral injection, the hematopoietic activity of the extract apparently depends entirely upon vitamin B_{12} content. When used orally, potentiation by normal human gastric juice is no greater than when an equivalent amount of pure vitamin B_{12} is similarly employed. Thus, vitamin B_{12} or closely related compounds appear to constitute the so-called extrinsic factor.

Addisonian pernicious anemia is the result of a deficiency chiefly of vitamin B_{12}, says W. B. Castle, M.D. This deficiency is predominantly due to a lack of gastric secretion, usually because of hereditary predisposition or advancing age. The consequent failure to assimilate vitamin B_{12} affects hematopoiesis adversely and often the integrity of the alimentary tract and nervous system as well. The macrocytic anemia, a result of both decreased production and increased destruction of defective red cells, reflects abnormal hematopoietic activity.

Vitamin B_{12} initiates and maintains complete hematologic and clinical remission in nearly all cases of addisonian pernicious anemia. Such effects can be produced by the daily injection of as little as 1 μg. of the pure vitamin. However, presumably because of the lack of the so-called intrinsic factor, the daily oral administration of as much as 50 μg. of vitamin B_{12} is relatively ineffectual for most patients. The vitamin need be injected for maintenance purposes only once a month.

Little is known concerning the nature of the so-called intrinsic factor of normal gastric juice. This thermolabile, alkali-resistant, nondialyzable substance is assumed to be an enzyme.

The hematopoietic effect of beef muscle extract and vitamin B_{12} is greater when administered parenterally than when given orally in identical amounts with gastric juice. Thus, the function of intrinsic factor may be merely to facilitate the absorption of vitamin B_{12} from the alimentary tract.

Normal human gastric juice has the ability to render vitamin B_{12} unavailable for microbial growth. This property suggests that the ef-

* Present status of the etiology of pernicious anemia. Ann. Int. Med. 34:1093-1106, 1951.

fectiveness of intrinsic factor depends upon ability to protect vitamin B_{12} from destruction by the intestinal flora. Aureomycin, by reducing the intestinal flora, increases the activity of orally administered vitamin B_{12} in pernicious anemia.

Defective diets and intestinal dysfunction or disease may result in nutritional macrocytic anemia in which the predominant deficiency is not of vitamin B_{12} but of pteroylglutamic acid. Daily oral doses of 1 mg. or more of this acid produce improvement in all types of nutritional macrocytic anemia. The drug is highly effective in many cases of tropical macrocytic anemia, pernicious anemia of pregnancy, and nutritional megaloblastic anemia in infants, in which no benefit is derived from vitamin B_{12} or purified liver extract.

Although hematologic remission may be produced in patients with pernicious anemia by administration of pteroylglutamic acid, degeneration of the spinal cord is apt to develop or progress and glossitis reappear if this drug is used alone. However, even large amounts of pteroylglutamic acid do not harm the nervous system, if liver extract or vitamin B_{12} is injected monthly.

Dietary deficiency of ascorbic acid restricts the formation of the metabolically active and closely related form of pteroylglutamic acid known as the citrovorum factor, or folinic acid. This mechanism probably operates in the production of megaloblastic anemia in infants fed insufficient amounts of ascorbic acid.

Chest Pain and Nodular Goiters

EDWARD ROSE, M.D., AND JOSEPH EDEIKEN, M.D.*

NODULAR cervical and intrathoracic goiters may be associated with variable thoracic pain frequently suggestive of an atypical form of angina pectoris.

The pain tends to occur without apparent cause, although effort, eating, or excitement may be precipitating or intensifying factors. At times the discomfort is predominantly nocturnal. Some individuals have lancinating sensations while others describe the pain as dull, boring, constricting, or burning.

Coexistent thoracic pain and nodular goiters in 7 cases, 6 without evidence of thyrotoxicosis, are described by Edward Rose, M.D., and Joseph Edeiken, M.D., of the University of Pennsylvania, Philadelphia. Associated coronary artery disease was infrequent. In all but 1 case the goiters were partially or entirely intrathoracic, and the duration of the goiter before onset of symptoms was usually unknown. The pain disappeared or was materially modified within a few days to two years after subtotal thyroidectomy.

* The association of nodular goiter with thoracic pain: report of seven cases. Ann. Int. Med. 34:1126-1136, 1951.

Definitive Diagnosis of Thoracic Disease

JOHN F. BRIGGS, M.D.*
University of Minnesota, Minneapolis

Mass roentgen surveys are increasing the number of patients consulting physicians about chest diseases. Final diagnosis of thoracic disease in such cases is usually made by the general practitioner.

The radiologist's opinion, though often accurate, is only an impression, warns John F. Briggs, M.D. Bacteriologic and histologic examination must be used and will usually be successful if answers to the following questions are sought:

What is the history of the case?

- What pulmonary diseases are found in the patient's locality?
- Has the patient been exposed to tuberculosis in the family or elsewhere? When, and to what extent?
- Does his occupation involve irritating dusts, vapors, or other harmful material?
- Has he lived in or traveled through areas where fungous infection is endemic?
- Is he racially prone to tuberculosis?
- Has an earlier chest film been made and for what purpose? Can it be obtained? The radiologist can undoubtedly help to procure such films.
- Was a tuberculin test ever done? What was the result?
- Has he ever had chest disease?

What are the results of the patient's physical examination? For this study, the patient should be examined without clothing, and all body systems, organs, and orifices should be studied in a well-lighted room.

What do laboratory examinations show? This study should include hemoglobin determination, the white blood cell and the differential count, sedimentation rate, urinalysis, Wassermann test, agglutination test for undulant fever in endemic or epidemic areas, and any other procedures indicated.

What is the value of the Mantoux tuberculin test? Accuracy of this, the most reliable method known for demonstrating tuberculosis, depends on potent material in proper dilution, accurate intradermal injection, and interpretation in forty-eight to seventy-two hours. A positive reaction is an area of induration exceeding 5 by 5 mm.

What is the radiologist's contribution? The roentgenologist is an invaluable consultant in these cases. Besides describing the lesions, he makes a tentative diagnosis, and may suggest other helpful radiography.

How are tubercle bacilli found? A series of 3 twenty-four-hour sputum samples are obtained for smears, culture, and guinea pig inoculation. If sputum is not raised, gastric

* Suggestions for the diagnostic study of a patient with an abnormal x-ray shadow of the chest. Dis. of Chest 20:24-34, 1951.

washes are done for culture and inoculation. Exudates such as pleural fluid are examined, and a search should also be made for nontuberculous bacteria, parasites, and malignant cells.

What other procedures are employed in diagnosis of chest lesions? Bronchoscopic examination and bronchograms, kymograms, and many other specialized methods are helpful. If necessary, the patient may be referred to other physicians or institutions. If malignant disease is suspected an exploratory thoracotomy should be done.

How long after recovery should observation continue? A roentgenogram is made on discharge after acute chest disease. In every instance of chest lesion or positive Mantoux reaction, radiograms are made at least once a year. The patient's private physician should insist upon periodic physical and roentgen examination after recovery and, if necessary, enlist help of the local public health officer or nurse.

Intravenous Use of ACTH

HAMISH W. MC INTOSH, M.D., AND C. B. HOLMES, M.B.*

THE most efficient and economical method of adrenocortical stimulation is continuous injection of ACTH by vein.

A satisfactory daily amount is 10 to 20 mg., finds Hamish W. McIntosh, M.D., and C. B. Holmes, M.B. Several schedules were initially compared at the Shaughnessy Hospital, Vancouver, B.C., for 2 patients disabled by rheumatoid spondylitis. Disease was inactive at the time of tests.

The first subject received increasing doses of ACTH at five-day intervals. From 2.5 to 160 mg. was given in 2,000 cc. of 5% glucose at the rate of 20 drops per minute for twenty-four hours every five days. At the end of the course, 20 mg. was injected intramuscularly every six hours.

In the second case, 20-mg. doses were injected by vein, also in 5% glucose at 20 drops per minute. Amounts of solution varied, and infusion periods were one minute and three, six, twelve, and twenty-four hours.

Circulating eosinophils and urinary 17-ketosteroids indicate greater stimulation with a steady intravenous flow of ACTH than with intramuscular injection. Activity is greatest when 10 mg. is given continuously for twenty-four hours.

The degree of adrenal excitation in one day is directly related to period of administration and is highest with a twenty-four-hour infusion.

* The intravenous use of ACTH. Canad. M.A.J. 65:33-35, 1951.

¶ ACUTE UNDULANT FEVER is suppressed by terramycin as promptly as by aureomycin or chloramphenicol. Symptoms and fever usually subside within two days and even after long illness patients are up and about in a week after start of treatment. Yet bacteremia may persist for several days, and relapse may occur even after four weeks of therapy. Vernon Knight, M.D., of Cornell University, New York City, and Francisco Ruiz Sanchez, M.D., and Amado Ruiz Sanchez, M.D., of the University of Guadalajara, Mexico, find that daily oral doses of 25 mg. per kilogram are adequate. Treatment was effective in 10 of 11 cases, and recurrences were controlled promptly in 2 instances. Relapses might be prevented by a combination of streptomycin and terramycin.

Arch. Int. Med. 87:835-843, 1951.

Aerosol Therapy with Vacuum Cleaner

JOHN M. SHELDON, M.D., ROBERT G. LOVELL, M.D., AND KENNETH P. MATHEWS, M.D.*

INHALATION treatment with antibiotics or bronchial dilators can be continued at home by sprays powered by a vacuum cleaner.

Both upright and horizontal cleaners have been employed by John M. Sheldon, M.D., Robert G. Lovell, M.D., and Kenneth P. Mathews, M.D., at the University of Michigan, Ann Arbor. Any model that will operate a paint sprayer works well.

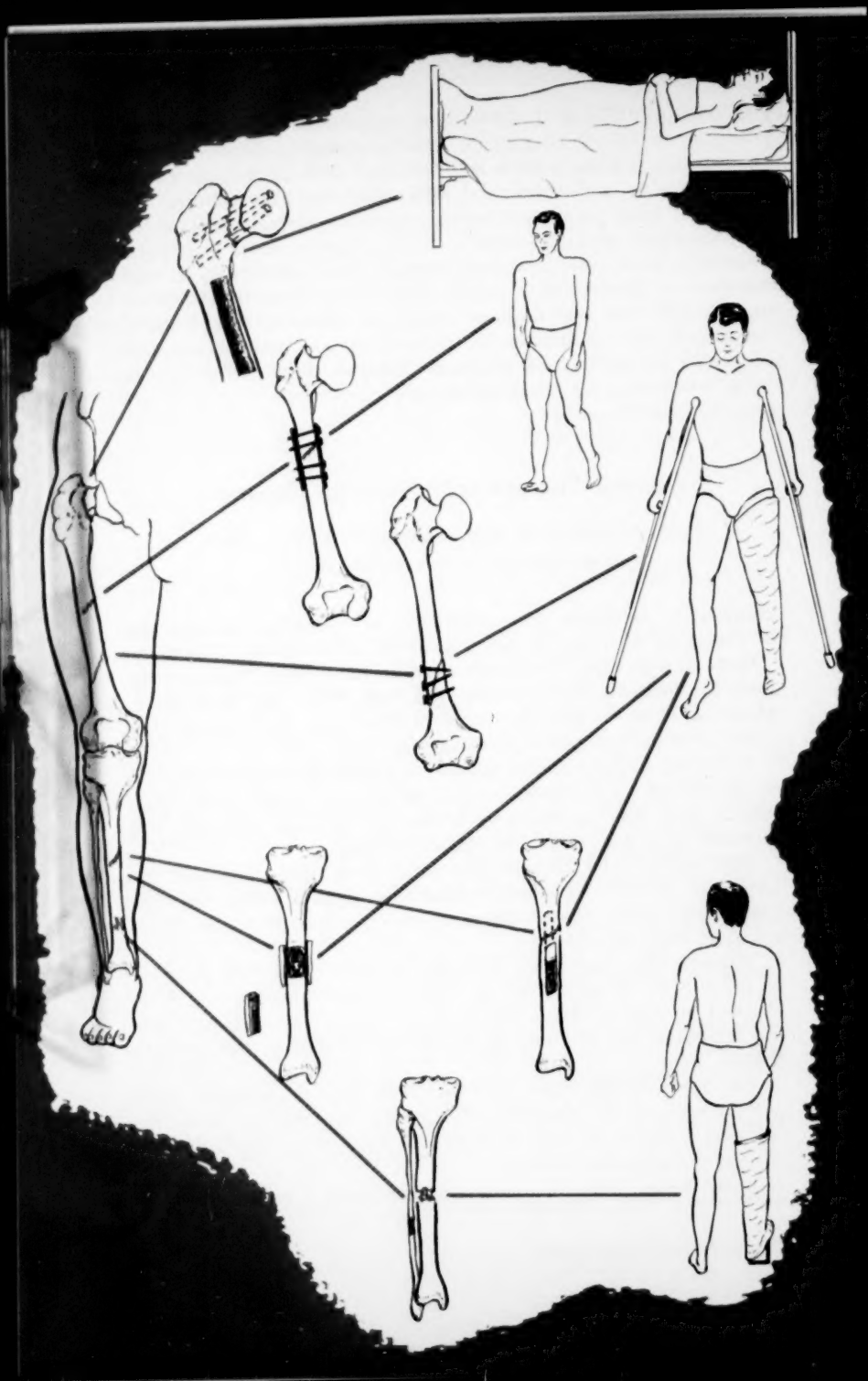
A one-hole cork or rubber stopper is placed in the tube attached to the vacuum cleaner exhaust or in the exhaust outlet. A 6-in. glass tube 5 to 8 mm. in diameter is inserted through the cork and fastened to a 3-ft. length of rubber tubing.

The rubber tube is connected to a 10-in. glass tube and the latter run through a two-hole rubber stopper in a gallon jug. The jug should contain enough water to cover the tube outlet and filter out dust from the cleaner.

Through the other hole is slipped a short glass tube fastened to about 5 ft. of rubber tubing, which is interrupted a foot from the end by a glass Y-tube. The Y allows exhaled air to escape, and on inspiration the free end of the tube is covered by the patient's finger.

The rubber tube leads to a DeVilbiss No. 40 nebulizer filled with 1 or 2 cc. of medicine. All stoppers are removed from the atomizer before aerosolization is started, and the opening is directed toward the posterior pharynx.

* Aerosol therapy. Vacuum cleaner as a practical source of positive pressure for nebulization. J.A.M.A. 146:648-650, 1951.



Biologic Treatment of Fractures

DALLAS B. PHEMISTER, M.D.*
University of Chicago

BROKEN bones will not unite unless mechanical reduction and immobilization conform to biologic laws.

To stimulate growth of callus and orderly ossification, the fragments should be held in firm contact by contracting muscles, and when possible by early weight bearing.

Old ununited fractures of the shaft are often repaired simply by fresh bone grafts applied across the fracture line. A necrotic femur head may be replaced by new growth if holes are drilled and plugs of live bone inserted, explains Dallas B. Phemister, M.D.

For transplants, fresh autogenous grafts should be used when feasible. Fresh homogenous grafts supply some growing cells, but preserved graft acts only as a skeleton for replacement by the host.

In open reduction of oblique fracture, the fragments should be fastened tightly together by a lateral compression clamp with metal screws.

When the shaft is broken transversely, especially the femur, a slotted bone plate is used to permit motion of fragments in the longitudinal axis. While position is maintained, the fragments are pulled together by overlying muscles. The two slotted plates employed by L. T. Peterson and others support the leg so well that walking can begin early without external aid.

The sliding intramedullary graft of Hoglund is particularly suitable for fresh fractures of the tibial shaft or upper end of the humerus. A piece of bone 6 or 7 cm. long, barely less wide than the medullary canal, is cut from the longer fragment, about 1 in. from the fracture line.

The end of the longer fragment is raised, and the graft is inserted full length into the canal. The ends are realigned, and the graft is driven across the fracture line by hammering on a chisel placed against the end through a window.

If desired, a piece 10 or 11 cm. long may be cut and 4 or 5 cm. taken from one end to form an external graft, after intramedullary placement of the longer portion.

Fractures may fail to unite because of inadequate immobilization, displacement of fragments, distraction of the parts by extreme weight extension, rigid fixation by metal plates or bone grafts with fragment ends insufficiently impacted, massive aseptic necrosis of bone ends, interposition of soft parts, or infection. In time, the damaged intermediary callus becomes fibrocartilaginous and somewhat necrotic, and a false joint space may be established.

An incision is made at the frac-

* Biologic principles in the healing of fractures and their bearing on treatment. Ann. Surg. 133:433-446, 1951.

ture site, and the periosteum is reflected. Uneven surfaces are smoothed to form a graft bed, and some intermediary callus may be removed to correct bone angulation.

Either 1 or 2 grafts may be taken from the tibia or ilium and laid in prepared grooves. Displacement is prevented by the remaining callus and soft parts. A plaster dressing is applied and left in place for two or three months.

Under the stimulus of freshening, graft, and compression, fibrocartilage and fibrous callus ossify, new callus forms, and the fragments unite. After infection, the bone should be approached through intact tissue, away from the healed wound.

If an ununited fracture of the tibia has a short gap from injury or absorption, the unbroken fibula may hold the tibial fragments apart. Contact is achieved by oblique osteotomy of the fibula a little above or below the fracture. To help bring the ends together, the patient is allowed to walk in a plaster dressing, and onlay graft is soon performed.

When the leg has been so shortened that the full length must be preserved, all intermediary callus is removed, the gap is filled with cancellous bone, and 3 onlay tibial grafts 5 to 7 cm. long are applied. Longer defects are repaired by insertion of 2 massive grafts and fixation to the fragments with screws.

After fracture of the femur neck, the hip should be immobilized and no weight borne for at least a year, while progress is watched by repeated radiograms. If the head dies, density is greater than in the distal fragment. Necrosis is recognized by the mottled density of callus invasion.

When the head unites with the neck but becomes necrotic, 2 holes each 1 cm. in diameter should be drilled from the side of the shaft through the neck and head. Tibial bone grafts just under 1 cm. broad are then inserted the length of the holes.

If a head dies and does not unite, but with little breaking down or displacement, the bone grafts are utilized; repair is aided by 2 small threaded pins or a Smith-Petersen nail.

¶ ACUTE LOW BACK DISORDERS may be diagnosed from the response to a muscle relaxant, Myanesin. The test is especially useful if intervertebral disk lesions are suspected, report Edward B. Schlesinger, M.D., and Frank E. Stinchfield, M.D., of Columbia University, New York City. Before and after injection of 100 cc. of 2% solution by vein, the patient's ability to raise the legs from a supine position is appraised. If pain subsides and motion improves after injection, nerve root compression is largely due to muscle spasm and may be relieved by conservative measures, such as bed rest, traction, physical therapy, and braces. If symptoms are unaffected by injection or return as soon as the drug concentration drops below therapeutic levels, operation is probably necessary.

J. Bone & Joint Surg. 33-A:480-484, 501, 1951.

Treatment of Arterial Embolism

J. ROSS VEAL, M.D., AND THOMAS J. DUGAN, M.D.*
Georgetown University, Washington, D.C.

CHANCES for restoring adequate circulation to a limb after peripheral arterial embolism are excellent if treatment is started early.

J. Ross Veal, M.D., and Thomas J. Dugan, M.D., find that an orderly plan of procedure may be followed so that conservative therapy may be tried and, if inadequate, surgery performed in time.

A sympathetic nerve block with 1% novocain should be done as soon as the patient is admitted to the hospital. Meanwhile preparations are made for surgical intervention.

If circulation is adequate in thirty minutes, as shown by rise in skin temperature, return of color, relief of pain, and restoration of function to the limb, embolectomy is unnecessary. Heparin is then given until adequate control can be gained by dicumarol.

If, however, the results thirty minutes after the block are unsatisfactory, embolectomy is done, followed, after four hours, by anticoagulant therapy. The procedures may all be performed before survival of the limb is endangered, that is, within eight hours of onset of the embolism; most patients reach a hospital less than four hours after the episode.

Embolism of the brachial artery can apparently be treated successfully by conservative methods, especially if the block is below the profunda branch. The embolus produces vasospasm and ischemia but not to the degree ordinarily seen when large arteries are involved. Usually the skin is cool and cyanotic below the obstruction, and severe pain is felt. The veins are partially filled, and the patient can move the extremity. Radial pulse is absent.

Some patients do not need sympathetic block, because circulation is only slightly changed. Nerve block is almost always successful and the limb never becomes gangrenous.

Anticoagulant therapy is usually continued for long periods, possibly for months, to limit development of postembolic thrombosis in the vascular bed of the limb and prevent cardiac thrombus. Vasodilator drugs are sometimes used as adjunctive therapy.

Patients with septic endocarditis occasionally have emboli in the brachial artery. During conservative therapy a firm, reddened, tender mass develops at the site of the embolus, representing a small mycotic aneurysm. Immediate excision of the aneurysmal segment causes no disturbance in blood flow and the arm circulation remains adequate.

Cerebral embolism is much more frequent with emboli in arteries of the upper extremities than with emboli in other arteries. The mortality rate with conservative therapy of all

* Peripheral arterial embolism. Ann. Surg. 133:603-610, 1951.

emboliams is apparently even higher than with embolectomy.

Embolism of the great vessels nearly always requires surgery. The incision should be placed at the level of the embolus and be long enough for adequate exposure and sufficient mobilization of the involved arterial segment (Fig. 1*a*). A soft rubber tube is passed around the artery below the embolus and a second at a higher level to control hemorrhage. A longitudinal incision is made in the artery about one-half the length of the circumference of the artery for extraction of the clot (Fig. 1*b*). The opening is made just below a main tributary or division of the involved segment.

The clot is removed tail end first (Fig. 1*c* and *d*). The clot may emerge spontaneously or may be extracted by suction or finger expression from above downward (Fig. 1*e* and *f*). The immediate gush of blood after removal is controlled by the proximal rubber band.

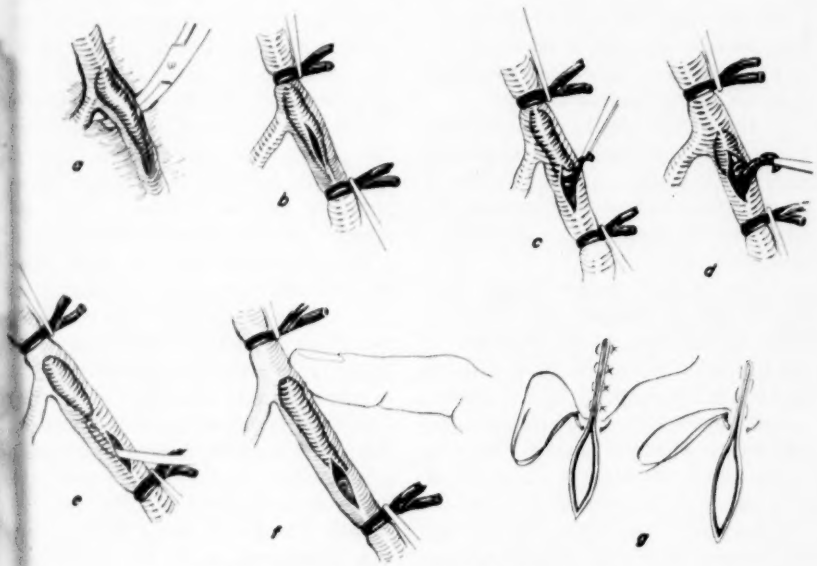


Fig. 1. Steps in removal of embolism

The incision in the arterial wall is closed by means of either continuous or interrupted everting sutures (Fig. 1*g*), and the slight oozing from the needle punctures is stopped by pressure over the suture line. Hemostasis should be complete before closure is attempted.

Drainage and pressure bandages should be avoided, and prompt mobility of the involved extremity is encouraged.

The best approach to a saddle aortic embolus is the transperitoneal route (Fig. 2*a*), although in cases of

extreme illness the femoral route is used (Fig. 2*b*). An embolus of an iliac artery can usually be removed through an incision in the femoral artery, but occasionally the clot is so impacted that a retroperitoneal incision is better.

Failures of embolectomy occur frequently when the vessel is severely damaged by arteriosclerosis. A fresh thrombus may form at the old site before the artery can be closed or, if the artery is extremely calcified, an actual fracture may occur when the hemostatic rubber band is drawn taut. In such cases, amputation of the extremity is necessary.

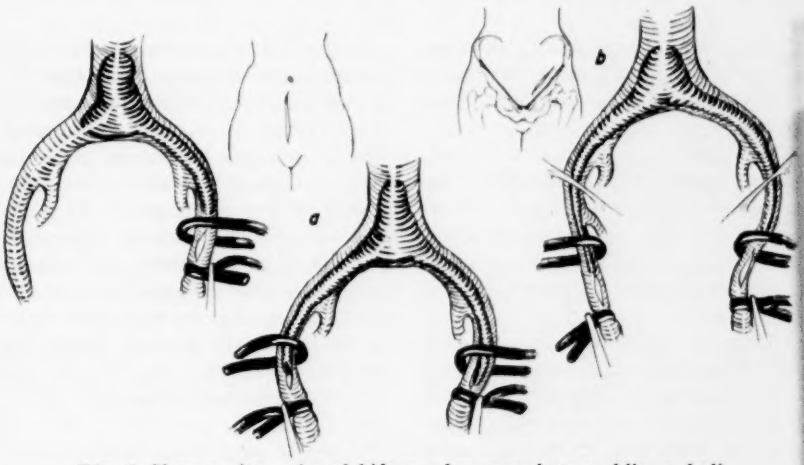


Fig. 2. Transperitoneal and bifemoral approach to saddle emboli

Besides cerebral embolism, pulmonary emboli may occasionally defeat a seemingly good result. Since so many emboli originate in the auricular appendages in fibrillating hearts, prophylactic removal of the appendages may prevent embolism.

¶ PURPURA HAEMORRHAGICA of primary thrombopenic type is arrested or improved by splenectomy in about 72% of cases. Of 68 surgical patients at the Presbyterian Hospital, New York City, those under 31 years old obtained the best results. To prevent fatal cerebral bleeding, operation should be prompt except in minor cases, believe Robert H. E. Elliott, Jr., M.D., and Joseph C. Turner, M.D., of Columbia University, New York City. Examination of bone marrow differentiates purpura from other blood diseases, but treatment depends chiefly on symptoms. Megakaryocytes are usually normal or increased in number.

Surg., Gynec. & Obst. 92:539-544, 1951.

Organ-displacing Abdominal Tumors

JOHN J. MORTON, M.D.*
University of Rochester, N.Y.

SWELLINGS of any kind, abscesses, cysts, or benign or malignant tumors, may displace abdominal viscera.

Air-containing viscera are more easily moved than fluid-containing ones. The degree of fixation of an organ and the peritoneal relations as well as the fascial planes determine the direction in which a tumor enlarges.

John J. Morton, M.D., reviews the diagnostic implications of such displacements, as determined by diligent physical and roentgen examinations, including three-dimensional studies, intravenous and retrograde pyelograms, and barium study. If the circumstances under which tumors appear are considered with the location and type of encroachment on nearby organs, accurate diagnosis may be made.

The stomach may be displaced because of abscess after perforations by foreign bodies, ulcer, cancer, or operation. If the symptoms are not sufficiently acute to require immediate exploration, an abscess may develop in the subhepatic region or lesser peritoneal cavity.

A subhepatic or anterior subphrenic abscess pushes the pylorus down, medially and posteriorly. Abscesses in the lesser peritoneal cavity push the stomach laterally and displace the transverse colon forward and down.

Left-sided subphrenic abscesses will separate the stomach from the diaphragm, and posterior subphrenic abscesses cause deviation of the stomach downward and anteriorly. Bleeding from a torn or ruptured spleen also causes wide separation of the stomach air bubble from the diaphragm.

Splenic enlargements and tumors may move the stomach forward and medially, so that the transverse colon is carried downward and the splenic flexure flattened. The left kidney may be depressed toward the pelvis and tilted.

Tumors of the left adrenal push the stomach forward and medially, the splenic flexure and transverse colon downward, and the kidney downward, with rotation on the renal axis. Tumors of the right adrenal may move the right lobe of the liver up, the hepatic flexure and kidney down, rotating the kidney so that the upper pole turns medially or laterally.

An enlarged kidney pushes back behind the colon, and the iliopsoas muscle makes the lower poles tilt forward. On the right, the upper renal pole encounters the liver and is forced downward. Kidney tumors push the ascending or descending colon forward and medially.

Retroperitoneal cysts and tumors most often appear in the lumbar region, usually displacing the ureter

* Organ-displacing abdominal tumors. Ann. Surg. 133:665-685, 1951.

medially or laterally and forward. Ascending, descending, or sigmoid loops may be pushed medially and forward. If the tumors are very large, the stomach may be moved forward and medially.

Presacral dermoids and pelvic kidneys push the rectum forward and sometimes to one side. The bladder is also compressed and has an anterior position.

Retroperitoneal abscesses usually arise in vertebrae. Such abscesses gravitate down the iliopsoas muscle, ordinarily to point in the inguinal region. Sometimes an appendix or a diverticulum ruptures retroperitoneally. In such instances, the abscess is closely confined to the cecal or sigmoid region and displaces these viscera forward and medially.

When solid tumors of the head of the pancreas become large, the duodenal loops are separated, with the second part of the duodenum pushed forward to the right, and the third part down and back. The pylorus may be displaced upward, forward, and toward the midline.

Pancreatic pseudocysts, occurring most commonly between the lower border of the stomach and the transverse colon, displace the stomach medially and forward, and the transverse colon downward and backward. Enlargement of a cyst between the stomach and the liver tilts the liver slightly up, and pushes the stomach down and back.

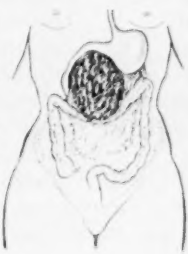
Enlargement of the gallbladder from hydrops or, secondarily, from a pancreatic or common duct tumor presses on the pyloric region of the stomach and the first and second portions of the duodenum. The stomach is pushed medially and the duodenum is flattened downward.

Choledochus cyst causes displacement of the first and second portions of the duodenum anteriorly and to left of the midline, and displacement of the transverse colon downward and medially.

Enlargement of the right lobe of the liver may produce deviation of the stomach and duodenum posteriorly and to the left. Left liver enlargements displace the colon forward and the stomach up and back.

Omental cysts exert pressure on walls of the stomach and the transverse colon. The stomach rides up and forward, and the colon moves either up or down and posteriorly. The tumor is freely movable and is differentiated from a cystic kidney tumor by pyelograms. Mesenteric cysts are centrally located and cause little permanent distortion of any viscus.

Small ovarian cysts, when trapped in the pelvis, may flatten the rectum against the sacrum, with deviation from the midline. The bladder is depressed and deviated to the right or left depending on the location of the cyst. A larger ovarian cyst rides up out of the pelvis taking the uterus along. The cyst may cause pressure on the sigmoid or cecum displacing the bowel laterally. Often a distinct curved line is found on the transverse colon where the upper edge of a cyst rests against the bowel and pushes the bowel backward.



Tuberculosis of the Genitourinary Tract

WILLIAM P. HERBST, M.D.*
Walter Reed Hospital, Washington, D.C.

THE outlook for persons with genitourinary tuberculosis is more hopeful than ever before, owing largely to the new antibiotics.

With or without operation, however, prolonged rest and care are absolutely necessary. Needlessly often, after a nephrectomy, the patient goes back to work too soon, and has a fatal relapse.

Tubercle bacilli are spread to urinary or genital organs by the blood from a focus elsewhere in the body. Infection is most common between ages of 20 and 40 years and generally involves only one side.

Acute miliary infection is terminal, as a rule. The chronic forms are necrotic or proliferative, and in some cases the kidney enlarges to 3 times normal size.

Symptoms may be entirely absent or severe. A typical combination consists of urinary frequency, dysuria, and renal pain, with acid-fast organisms in urine. The bladder is often inflamed, hemorrhagic, and ulcerated, with a red, gaping ureteral orifice. Capacity may be so reduced that a cystoscope perforates the wall.

Involvement of the prostate is indicated by a hard, nodular consistency. An infected vas deferens or epididymis may be thickened or beaded.

In urograms, one or more renal calyces may have moth-eaten or irregular surfaces. Rarely, the entire kidney and ureter are outlined by calcification. Large lobulated shadows in a distended kidney are produced by caseous material.

Inoculation of guinea pigs is usually the most reliable available method for confirming diagnosis, believes William P. Herbst, M.D., although culture or stained urinary sediment may be preferred in a particular laboratory.

If roentgenograms show only slight involvement and symptoms do not progress, medical treatment may be adequate. Streptomycin with or without chaulmoogra oil and para-aminosalicylic acid may be spectacularly effective.

Aureomycin occasionally succeeds where other agents fail and may reduce bladder symptoms. With extensive epididymo-orchitis, endocrine imbalance may be corrected by implanted pellets of testosterone.

Frequency and dysuria are alleviated by antibiotics, antispasmodics, and antiseptics such as Pyridium or Caprokol instilled daily, preceded by Nupercaine. Oelogomenol, Cajandol, cod-liver oil, or graded 0.5 to 5% solutions of phenol may be given.

When tubercle bacilli cannot be eliminated from urine or even minor lesions progress, surgery must be considered. In case of bilateral involvement, a kidney with extensive dis-

* Tuberculosis of the genito-urinary tract. Dis. of Chest 19:537-543, 1951.

ease may be removed if damage on the other side is small and relatively painless. Operation is contraindicated if the lungs or other regions are seriously invaded.

The epididymis may be removed with or without the testicle, and in some cases the prostate gland and entire seminal tract are excised. Operations sometimes warranted for intolerable bladder symptoms are cutaneous ureterostomy, nephrostomy, presacral neurectomy, or cordotomy.

Postoperatively, the primary need is rest in a sanatorium or equivalent care. Walking to the bathroom and to meals is allowed. Exposure to fresh air and sunlight is beneficial, if the climate permits and lungs are not actively infected. The Southwest is a favorable section.

The diet should include sufficient milk, meat, eggs, and whole cod-liver oil. Peace of mind is particularly important. Occupational therapy or social service advice may be needed.

Steroid Hormone Allergy

GEORGE P. HECKEL, M.D.*

SIMILARITY of symptoms of the painful ovary and congestion-fibrosis syndromes, premenstrual distress, painful breasts, including chronic cystic mastitis, and the menopause points to a common etiology.

George P. Heckel, M.D., of the University of Rochester, N.Y., believes that altered reaction, or allergy, to steroids is an important causative factor. Ovarian insufficiency may be the basis of the allergy.

When skin testing with steroid hormones was done for 40 healthy women and men and 216 patients with symptoms of ovarian pain, congestion fibrosis, and associated menstrual conditions, the symptomatic patients had greater frequency and degree of skin sensitivity than did the normal individuals. The symptoms were aggravated by steroids to which sensitivity had been demonstrated, and exacerbations coincided with an increase of skin sensitivity to steroids. Symptoms recurred and old skin tests were reactivated during emotional stress.

Relief of symptoms often follows desensitization with steroids. This consists in injecting subcutaneously, one to three times weekly, small doses of steroids, notably pregnandiol, in sesame oil or peanut oil. With steroids dissolved in sesame oil, the skin test is more delicate for detecting steroid allergy. Skin sensitivity to steroids is nonspecific and variable. About one-third of apparently normal men and women have positive skin reactions. Most individuals react to several steroids.

* Endogenous allergy to steroid hormones. Surg., Gynec. & Obst. 92:191-208, 1951.

Bilateral Polycystic Ovaries

MICHAEL L. LEVENTHAL, M.D., AND MELVIN R. COHEN, M.D.*
Michael Reese Hospital and Northwestern University, Chicago

STERILITY, a secondary amenorrhea, a masculine type of hirsutism, and, less consistently, retarded breast development and obesity are indications of the Stein syndrome, which results from endocrine imbalance and is associated with bilateral polycystic ovaries.

Menstrual and reproductive function may be restored by bilateral wedge resection of the ovaries, explains Michael L. Leventhal, M.D., and Melvin R. Cohen, M.D., reporting 10 recent cases of this infrequent condition.

Compared to the many women with menstrual irregularities and sterility from other causes that can be successfully treated by medical means or that resolve spontaneously, patients with the Stein syndrome are few. Therefore, to avoid unnecessary surgery, careful study and discriminative selection of cases are important.

Patients with the Stein syndrome have had a regular menarche and menstruation, but the cycle becomes irregular, bleeding is increased or diminished, and ultimately amenorrhea occurs. Hirsutism is present in 50% of cases. Sterility is usually the cause for seeking medical aid.

Bimanual examination reveals a normal or small uterus and bilateral ovarian enlargement. For obese patients, examination under anesthesia may be needed, but a pneumoroentgenogram of the pelvis is a better diagnostic aid. The patient's basal metabolic rate is usually not low but, if so, the use of thyroid extract does not restore reproductive function. Estrogen, progesterone, and gonadotropin do not correct the amenorrhea. Vaginal smears do not show usual cyclic changes, and pregnandiol determinations tend to be high.

The symptoms may result from steroids produced in the hyperplastic thecal layer of the follicle in the polycystic ovary. Quantitative variations in secretion of the steroids may cause abnormalities of menstruation.

At operation the ovaries appear almost as large as the uterine fundus. The enlargement is in the form of an interpolar elongation with the ovary appearing tense and oval. The tunica albuginea is thick, tough, and pearly white. Sections reveal a fibrous-appearing capsule and stroma framing innumerable follicle cysts containing clear fluid. Microscopically, the follicles appear in various stages of development, but a cumulus with ovum is rare. Hyperplasia of the theca interna cells is usually pronounced, with fairly frequent luteinization of the hyperplastic layer.

Bilateral wedge resection was fol-

* Bilateral polycystic ovaries, the Stein syndrome. Am. J. Obst. & Gynec. 61:1034-1046, 1951.

lowed by restoration of normal menstrual cycles for all 10 patients. After operation, 7 of the patients became pregnant within two years. Duration of sterility for 5 of the patients had been three to seven years. Hirsutism was present in 7 of the 10 patients. After surgery the growth was arrested in 3 cases and improved in 4, but in no case disappeared.

Diagnosis of Fungus Infections

DONALD M. PILLSBURY, M.D., AND ALBERT M. KLIGMAN, M.D.*

FUNGUS cells are easily demonstrated in biopsy specimens, exudates, tissue fluids, or skin scrapings when stained with the periodic acid-Schiff technic. The method is practical and the results are far superior to those from potassium hydroxide mounts.

Fungus cells stain red or various shades of magenta with the periodic acid-Schiff technic. The tissue background is colorless or slightly pink. Excellent contrast is afforded and a moment's glance with the low-power lens of the microscope is sufficient to locate the fungus.

The procedure for staining specimens is described by Donald M. Pillsbury, M.D., and Albert M. Kligman, M.D., of the University of Pennsylvania, Philadelphia, as follows:

A drop or two of egg albumin is placed on the lesion, which is then scraped with a knife. The scrapings are smeared over the slide. The formula is:

1] Immerse slide in 95% alcohol one minute
2] Immerse in 5% aqueous solution of periodic acid three minutes
3] Wash in running water two minutes
4] Stain in Schiff reagent eight minutes
5] Rinse in running water one minute
6] Dehydrate through 95% alcohol, absolute alcohol, and xylol
7] Mount with clarite

Steps 6 and 7 may be omitted if permanent mounts are not required. Mounting is then done in a non-acid-containing water-soluble medium after step 5.

Tissue may be processed by any fixative, embedded, sectioned, and dehydrated.

To stain sections:

1] Deparaffinize in xylol. Rinse in absolute alcohol. Rinse in distilled water
2] Immerse in 1% solution of periodic acid five minutes
3] Wash under tap five minutes
4] Transfer to Schiff reagent ten minutes
5] Wash under tap water ten minutes
6] Dehydrate, clear, and, finally, mount

* A new histochemical tool for the definitive diagnosis of fungus infections. Tr. New York Acad. Sc. 13:145-148, 1951.

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Gardner, Butler, et al., state: "Relative to human milk, cow's milk has a low Ca:P ratio..."[1] Nesbit writes: "Tetany of the newborn is now recognized as a definite entity... and often accompanied by an increased phosphorus and lowered blood calcium."[2] Dodd comments that "hypocalcemia tetany in the newborn may be of serious consequence."[3]

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	128 mg.	[illegible] mg.	per qt.
Ca:P ratio	.041%	[illegible]	
	480 mg.	[illegible] mg.	per qt.
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	5 mg.	[illegible] mg.	per qt.

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1. Gardner, L. I., Butler, A. M., et al.: *Pediatrics* 5:228, 1950.
2. Nesbit, H. T.: *Texas State J. M.* 38:551, 1943.
3. Dodd, K., and Rapoport, S.: *Am. J. Dis. Children* 78:537, 1949.
4. Recommended Daily Dietary Allowances, Revised 1948, Food and Nutrition Board, National Research Council.

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Choice of Anesthetic Agents

FRANCIS F. FOLDES, M.D.*
University of Pittsburgh

THE medical anesthetist should have a free hand in choosing preoperative medication, the anesthetic agents, and method of administration, and these must suit the individual case.

The biochemical and pathophysiologic changes caused by the patient's disease and the effects of the contemplated surgery must be considered, states Francis F. Foldes, M.D. The anesthesia and mode of administration must not only be safe but must also ensure the best operating conditions and, as far as possible, be pleasant for the patient. Conditions under which anesthesia is inadvisable—shock, dehydration, or metabolic disturbances—should be corrected before surgery, if possible.

Age—The very young and the very old are sensitive to oxygen lack and respiratory acidosis and do not easily tolerate a closed system of anesthesia. Open-system ether is the best agent for infants. Closed systems and endotracheal tubes are indicated for children only during open chest surgery or when maintenance of a free airway is doubtful.

Endotracheal tubes are well tolerated by the aged, however, and should be used freely for such patients. If a closed system is necessary, to-and-fro absorption is better than a circle filter.

The pain threshold of elderly patients is frequently elevated and muscle tone poor, so that pre- and postoperative medication and quantity and concentration of anesthetic agents can be reduced. Contrarily, the pain threshold of adolescents is usually low, necessitating large doses of premedication and pentothal sodium anesthesia.

Body build—An endotracheal tube may be required to maintain free airway and adequate respiratory exchange in a short, thick-necked individual or a corpulent patient in deep Trendelenburg position.

Pregnancy—Large doses of medium and short-acting barbiturates in the first and second stages of delivery are ill advised, because liver function is often decreased by pregnancy. The drugs are decomposed slowly in such cases and enter the fetal circulation in relatively high concentration, causing prolonged depression of the newborn.

Pregnant women are sensitive to sedatives, analgesics, and general anesthetic agents, and spinal anesthesia has a tendency to spread higher in pregnant women than in other patients. From the anesthesiologist's point of view, regional methods are best for obstetric procedures.

Pathologic factors—If shock is present, cyclopropane provides the re-

* Physiologic basis for the choice of anesthetic agents and methods. Pennsylvania M. J. 54:537-540, 1951.

quired high oxygen concentration without increasing the discrepancy between the circulating blood volume and the vascular bed. Deep ether and high spinal anesthetics often cause severe circulatory collapse in cases of dehydration. Syncurine with pentothal sodium, and a 50:50 nitrous oxide–oxygen mixture give satisfactory anesthesia for dehydrated patients.

High oxygen concentration and adequate removal of carbon dioxide during anesthesia are required with circulatory disease. Respiratory exchange is greatly aided by endotracheal tubes. Deep ether and high spinal anesthetics are poorly tolerated, and chloroform and cyclopropane should not be used. A continuous drip of 0.1% procaine solution during anesthesia can prevent arrhythmia in cardiac disease.

Endotracheal oxygen-ether is usually the best general anesthetic agent for patients with chronic respiratory tract infection. Respiratory depression must be avoided; pentothal sodium and curare are inadvisable for asthmatic patients.

Metabolic disease—Anesthetic materials tend to accentuate the biochemical changes caused by metabolic disorders.

Ether and chloroform produce acidosis and must be avoided with diabetes. Noncompensated diabetic persons tolerate pentothal sodium poorly. Regional or spinal anesthesia should be used when possible.

With adequate sedation, hyperthyroid patients can be given local or regional anesthesia. If tracheal collapse is a possibility, endotracheal anesthesia with pentothal sodium and nitrous oxide–oxygen is used.

If general anesthetic agents must be used for hypothyroid patients, cyclopropane or ether is best. Any agent detoxified or excreted in the organs will augment liver disease. Spinal or regional anesthesia should be used when possible. If a general anesthetic is required, pentothal sodium with nitrous oxide–oxygen is well tolerated, and cyclopropane is preferable to ether.

Ether-oxygen seems to be the safest for neurologic disorders. If the patient's cooperation is necessary, relatively large doses of procaine intravenously with local infiltration and small doses of pentothal sodium are useful.

¶ LARYNGOSPASM DURING ANESTHESIA may usually be relieved by Trasentine, a smooth muscle relaxant. Relief is most often permanent for laryngeal stridor but, even when temporary, lasts long enough for passage of an endotracheal tube. Dosage varies from 25 to 50 mg. In most instances, 35 mg. given intravenously in aqueous solution exerts a spasmolytic effect within thirty seconds to a minute. The drug, employed in 115 cases by Max S. Sadove, M.D., and Reuben C. Balagot, M.D., of the University of Illinois, Chicago, produced complete relief in 96, and partial relief in 14. Hypotension developed in 2 cases but responded to 1 mg. of neosynephrine.

Current Researches in Anesth. & Analg. 30:115-119, 1951.

Home Care of Poliomyelitis

EMIL D. W. HAUSER, M.D.*
Northwestern University, Chicago

After the acute stage of poliomyelitis, most patients recover faster at home than in an institution.

For home care, all aspects of rehabilitation, including general health measures, should be planned to the last detail and supervision continued as long as needed to prevent relapse. The methods employed at Passavant Hospital, Chicago, are reviewed by Emil D. W. Hauser, M.D.

As a rule, convalescents are referred directly from contagious departments, and the majority are up and around. All but the most seriously affected are sent home promptly.

The physical therapist of the Visiting Nurses Association is informed, and regular calls are requested. The problem is described, specific rules for treatment are laid down, and the reasons are explained to family, therapist, and patient.

Instructions describe the exact amount of rest, type and duration of exercise, and length and frequency of warm baths and hot packs. Exercises are demonstrated to the subject and his parents. The child's mother is taught how to administer hot packs.

Diet and tonics are prescribed, and a time is set for an office visit. As the condition improves, the intervals out of bed are increased.

When the child goes back to school, the teacher is notified if part-time attendance or rest periods are desired. Should absence from school be prolonged, lessons may be arranged at home.

Every effort is made to discontinue therapeutic routines no longer essential for recovery and to replace specific exercises with normal activity. Supervision is continued until strength is restored and relapse unlikely.

If convalescents are ambulant but have some true paralysis causing permanent disability, braces are supplied to prevent deformity and insure the widest possible range of movement. Later, an orthopedic operation is done so that the support can be discarded.

Hospital care is obligatory for severe paralysis with bulbar and respiratory involvement. The objectives are first to save life, then to restore all possible power.

In most instances, after swallowing function is regained, a program of functional exercise can be carried out at home, if the patient's room is furnished with a hospital bed and overhead frame. In some cases use of a simple respirator must be continued except for a few hours during the day.

A practical nurse is taught routine care, a physical therapist comes once a week, and the social worker and physician return at intervals to

* Home care for poliomyelitis. Quart. Bull. Northwestern Univ. M. School 25:21-24, 1951.

offer encouragement and give further instructions. Training by an occupational therapist may be worth while.

Various amusements and profitable skills may be learned even by greatly handicapped individuals. The invalid and his family are happy to be together, progress is more rapid in the familiar environment, expense is less, hospital beds are emptied sooner, and everyone is better satisfied.

Cortisone in Congenital Adrenal Hyperplasia

LAWSON WILKINS, M.D., AND ASSOCIATES*

SMALL daily doses of cortisone reverse many of the manifestations of pseudohermaphroditism caused by congenital adrenal hyperplasia.

The disease, associated with a high output of urinary 17-ketosteroids, leads to precocious virility and macrogenitosmia in males and to pseudohermaphrodism in females. The condition has not heretofore been amenable to treatment.

Cortisone given in initial doses of 50 to 100 mg. daily to children, or 25 to 50 mg. daily to infants, rapidly decreases the urinary 17-ketosteroids. The total daily excretion drops to 4 to 8 mg. in older and to 0.3 to 1.4 mg. in younger patients. This suppression is subsequently maintained by 25 mg. of cortisone daily or 50 mg. every other day for older children. Doses of 10 to 25 mg. daily suffice for infants. The effects last as long as the treatment is given.

The biologically active androgen in the urine is reduced to a greater degree than the 17-ketosteroids. Urinary estroids, determined both chemically and biologically, are high before treatment but are reduced concomitantly with the 17-ketosteroids. The corticosteroids of the urine are moderately decreased by cortisone but may rise again during treatment, probably because of derivation from the cortisone administered.

The lowering of urinary 17-ketosteroids, estrogens, and androgens in 10 cases is reported by Lawson Wilkins, M.D., Roger A. Lewis, M.D., Robert Klein, M.D., Lytt I. Gardner, M.D., John F. Crigler, Jr., M.D., Eugenia Rosemberg, M.D., and Claude Jean Migeon, M.D., of Johns Hopkins University, Baltimore. Results included feminization in 2 virilized girls. After cortisone treatment for five months, breasts developed and the vaginal smear showed estrogenic changes with four regular menstrual periods for 1 of the patients.

In another case, erections of the stump of an amputated clitoris stopped promptly after administration of cortisone.

* Treatment of congenital adrenal hyperplasia with cortisone. J. Clin. Endocrinol. 11:1-25, 1951.

The Child Who Won't Eat

LYON STEINE, M.D.*
Valley Spring, N.Y.

To expect a small child always to be hungry is a fallacy. Most children have a diminution of appetite after the first year, and refusal to eat does not necessarily indicate organic disease.

Food intake which is physiologically adequate may seem insufficient to the mother. After the extremely rapid growth of the first year, children settle down to the decelerated rate of childhood, with food requirements proportionately less. About the age of 5 or 6, the appetite spontaneously increases again.

The refusal of one or several specific foods is often misinterpreted by parents as loss of appetite. Usually these foods are ones which the adults feel are essential to the child's well-being. Substitutes are always available. Often, for instance, children will eat raw vegetables but refuse cooked ones.

Hunger is a normal, healthy, physiologic condition. The child will not realize that eating is fun unless he is allowed to get hungry, explains Lyon Steine, M.D. Feeding between meals, in response to vague hunger, a desire for sweets, or the mother's fear that the child did not take enough at the last meal may reduce the mealtime hunger stimulus and initiate a feeding problem. When parents are taught to look upon a child's hunger as healthy and desirable, the feeding problem is simplified.

Food should be served to children in a pleasant atmosphere and without coercion. No comments should be made on the amount consumed. Tasty food attractively presented under circumstances free of strong emotions is most likely to be accepted. Children eat best in the company of other healthy children. An only child can be helped by assembling 3 or more such children from neighboring families to eat together for at least one meal a day.

The definitely underweight child may not respond to attempts at increased food intake. Caloric intake, especially of protein, must be increased. This is possible, without added bulk, by using powdered skim milk. This material is almost tasteless and mixes well with mashed potatoes, omelets, cereals, custards, and other foods; 2 tb. are equivalent in food value to 1 glass of milk.

True loss of appetite is a medical problem. The usual causes of organic anorexia are febrile diseases, gastritis, constipation, catarrhal jaundice, anemia, leukemia, mental retardation, lead poisoning, arsenic and mercury poisoning, purpura, and some infections which occasionally produce little fever. Excessive vitamin intake or fatigue sometimes reduces appetite.

* When children won't eat. GP 3:53-56, 1951.

When specific organic and environmental causes for anorexia have been eliminated, therapeutic measures for appetite stimulation may be employed; for instance, 5 units of insulin may be given thirty minutes before meals. A failing appetite is sometimes effectively increased by 10 μg. of crystalline vitamin B_{12} orally each day.

New Antibiotics in Pediatric Practice

SAMUEL KARELITZ, M.D.*

CHLOROMYCETIN, aureomycin, and terramycin are the most important antibiotics developed since penicillin and streptomycin. All three have a broad therapeutic range with relatively low toxicity.

Aureomycin is perhaps the most widely useful antibiotic available today, says Samuel Karelitz, M.D., of Columbia University, New York City. The drug is effective against gram-positive cocci, some gram-negative bacilli, and the *Rickettsiae* and in brucellosis, amebiasis, herpes zoster, and spirochetal and *Spirillum* infections. Although valuable in therapy of atypical virus pneumonia, lymphogranuloma venereum, granuloma inguinale, and psittacosis, aureomycin has been tried unsuccessfully for other virus diseases.

Aureomycin resistance is not apparent. Toxic symptoms such as nausea, vomiting, diarrhea, skin eruptions, and black tongue may occur. Nausea and vomiting may be diminished by the use of alkali or tincture of belladonna.

Aureomycin is effective in dosages of 20 to 25 mg. per kilogram of body weight every twenty-four hours, or 50 to 60 mg. per kilogram in severe infections. The drug may be given intravenously, the recommended dose being 100 mg. three times a day.

Chloromycetin and terramycin have therapeutic ranges similar to that of aureomycin. Chloromycetin is perhaps the most effective nontoxic antibiotic for typhoid fever and *Salmonella* infections. Dosage is 50 to 100 mg. per kilogram every twenty-four hours, increased by 50% if administered rectally.

Terramycin is effective orally in amounts of 2 to 6 gm. daily in divided doses at six-hour intervals and may be given intravenously. The drug should not be used alone in influenzal meningitis.

Polymyxin and bacitracin have nephrotoxic tendencies and must be employed circumspectly. Polymyxin should be used in severe *Bacillus pyocyaneus* infections and for three to four days in infections that fail to respond to other antibiotics. Bacitracin can be safely applied locally for skin and ocular infections.

* Evaluation of aureomycin, chloromycetin, and other newer antibiotics. New York State J. Med. 51:234-238, 1951.

Medical Forum

Discussion of articles published in MODERN MEDICINE *is always welcome. Address all communications to The Editors of* MODERN MEDICINE, *84 South 10th St., Minneapolis 3, Minn.*

One-Stage Resection of Colon and Rectum*

Comment invited from
Robert A. Herfort, M.D.
Moses Behrend, M.D.
John C. Howell, M.D.
Howard D. Trimpi, M.D.
Claude F. Dixon, M.D.

► TO THE EDITORS: In patients with ulcerative colitis or polypoid adenomatosis of the colon who can be adequately prepared preoperatively, one-stage colectomy as described by Drs. Mark M. Ravitch and Jacob C. Handelsman is probably the procedure of choice. There is, however, a large residuum of patients, particularly in the group with chronic ulcerative colitis, who are so debilitated despite intensive preoperative care that the staged operation appears preferable.

I am dubious about the degree of anal sphincteric control attained by patients who have perineal ileostomies.

From the viewpoint of the patient's ultimate comfort an abdominal ileostomy with a Rutzen bag may prove more desirable than a perineal ileostomy with inadequate sphincteric action.

ROBERT A. HERFORT, M.D.
New York City

*MODERN MEDICINE, May 15, 1951, p. 114.

► TO THE EDITORS: I am a great advocate of performing one-stage operations on the gastrointestinal tract whenever and wherever possible. This would include certain cases of ulcerative colitis. In general adenomatosis of the colon, a one-stage colectomy unquestionably should be performed.

In certain cases of ulcerative colitis where the patient has been given a long course of medical treatment, a one-stage colectomy would be a hazardous undertaking. For instance, I have had experience with several patients practically on their death beds. Colectomy would have meant certain death in at least 2 cases. Almost continuous diarrhea, emaciation, and a pulse of 160 were present.

A preliminary ileostomy was performed under local anesthesia. The patients survived and gained 20 to 30 lb. within six months. A total colectomy was then performed, but the ileum was not placed in the rectum as described by Drs. Ravitch and Handelsman.

MOSES BEHREND, M.D.
Philadelphia

► TO THE EDITORS: After having read the article by Drs. Mark M. Ravitch and Jacob C. Handelsman, I would like to state that one-stage colectomy is always preferable if

[1] the patient's general condition from the standpoint of age, constitutional changes, and state of nutrition offers good risk, and [2] the colon and rectal disease is confined to the bowel or immediate lymph nodes. Some thought must be given to the patient's economic status, also.

In passing, I would say that I prefer to perform abdominal ileostomy rather than have the patient subjected to the possibility of stenosis of the terminal ileum occurring at the reconstructed pelvic floor level or of being confined to bed by temporary watery ileostomy stools through the anus.

JOHN C. HOWELL, M.D.
Philadelphia

► TO THE EDITORS: One-stage colectomy is the procedure of choice in the surgical treatment of multiple polyposis of the colon and medically intractable chronic ulcerative colitis. Our results have been excellent and mortality rates exceedingly low.

In cases of chronic ulcerative colitis, the opportunity often presents itself to perform colectomy with permanent ileostomy and, later, remove the rectum and distal sigmoid. The indications for such a procedure are those for the usual colectomy which is preceded by ileostomy.

It has been our experience, however, that the one-stage colectomy with ileostomy extends the patient greater benefit and immediate relief than does ileostomy alone. We have performed the colectomy with preliminary ileostomy in medically intractable chronic cases and in acute fulminating cases. In treating the latter there must be improvement through multiple blood transfusions and antibiotic preparations before this operation is performed. If the patient does not improve on this management, a simple loop ileostomy is carried out as an emergency.

We have not had experience with implantation of the ileum to the anus as described by Dr. Ravitch.

HOWARD D. TRIMPI, M.D.
Philadelphia

► TO THE EDITORS: Permit me to say that I have carried out total colectomy a great many times but never in one stage. In many instances in which an extensive ulcerative colitis was present, in which surgery is required, I have felt that the first requirement was ileostomy. According to my experience, this has permitted the majority of patients to regain lost strength and weight, following which colectomy is carried out usually in two stages.

Regardless of all the antibiotics presently at our command, patients still die from peritonitis. According to my knowledge, peritonitis is the largest single cause of death following abdominal operation.

Perhaps the fairest plan with regard to single- or multiple-stage procedures is to leave the matter to the individual surgeon. If it is the consensus in some circles that colectomy can be carried out more safely in one stage, then obviously it is the procedure that group of surgeons should employ. I feel that I personally can do greater service for the patient by a two-stage operation.

CLAUDE F. DIXON, M.D.
Rochester, Minn.

Use of Pacifier in Therapy of Infantile Colic*

Comment invited from
C. Kermit Pitt, M.D.
Owen H. Wilson, M.D.
Harry Bakwin, M.D.
Frank Howard Richardson, M.D.

► TO THE EDITORS: In commenting on the use of a pacifier in treatment of infantile colic, as described by Dr. Milton I. Levine and Anita I. Bell, I would like to quote from my paper "The Art and Science of Artificial Infant Feeding" (*J.M.A. Alabama* 19:101-104, 1949).

Colic is a fact, but I do not believe in the mythical "three months colic" which all parents must endure with good grace. Colic, or intestinal cramp, definitely occurs in babies, but there is always a cause which can usually be eliminated. Colic is practically always caused by one of five conditions. They are: loose stools, improper feeding technic, allergy, constipation and hunger. The majority of cases are caused by loose stools or improper feeding technic. I would not say that every baby who has diarrhea has colic, but I feel sure that most babies with acute diarrhea do have. Anybody who has had eight to ten loose stools daily should know what colic is. Time after time I have seen a baby cry excessively until even the two or three loose stools passed each day became water free and normal in consistency. Improper feeding technic promotes colic. Feeding at an interval of less than three hours so that the stomach and intestinal tract are always at work, feeding the baby lying down so that air is not expelled with swallowing, feeding with nipples containing holes so small that much air is swallowed and more than fifteen or twenty minutes are required for the appetite to be satisfied, these are common causes of so-called "colic."

The occasional baby who is allergic to one of the proteins in cow's milk may suffer colic. This may usually be corrected by changing to one of the hypo-allergic milks.

Constipation may infrequently cause cramps and, theoretically, hunger may do so, but these must be infrequent causes.

Practically, if an infant is fed a formula which agrees with him, if he is fed at a reasonable interval with proper technic, if he is allowed to satisfy his appetite, and if his stools are neither too hard nor filled with water, he should not suffer from colic; and if he is not ill from other causes, he will probably not cry excessively and will be a joy to his family and the envy of his neighbors.

If my conception concerning the etiology of colic is correct, the use of a pacifier can be of no value in the treatment. It is my opinion that the pacifier is not a bad gadget except when used as a conditioner to induce sleep. The baby invariably loses it and every time he wakes refuses to go back to sleep until someone replaces it in his mouth. It is like any other conditioned reflex used to induce sleep in that some other person besides the baby is always involved.

C. KERMIT PITT, M.D.
Decatur, Ala.

► TO THE EDITORS: When I first began teaching pediatrics, in 1897, I abused foolers vigorously, but I soon found that when I took a fooler away from a baby it only helped the drugstore sell another one, and since the infants seemed to improve with the pacifier—at least the parents stopped calling the doctor about colic—I discontinued that tirade. I can say this, however, a pacifier is a poor substitute for food, and the first

*MODERN MEDICINE, Apr. 1, 1951, p. 83.

move in the treatment of colic is to make sure it is not caused by hunger.

You can almost count on everything coming again. Last year at a postgraduate meeting I heard a progressive young pediatrician advocate phlebotomy. I was taught that at school, but never saw it practiced, although I myself was bled by a country doctor when after a hot day in the potato patch I contracted a headache, which he said threatened brain fever.

OWEN H. WILSON, M.D.

Nashville

► TO THE EDITORS: The use of the pacifier to satisfy the sucking impulse was recommended in the book *Psychologic Care during Infancy and Childhood,* Appleton Century, New York City, 1942, p. 225.

I see no harm in trying it on young infants with colic if measures at prevention are unsuccessful.

HARRY BAKWIN, M.D.

New York City

► TO THE EDITORS: The discussion of colic in my article on breast feeding (*J.A.M.A.* 142:863-867, 1950) explains my feeling about this symptom as an anatomic clinical entity, although I give space to the opinions of some who still hold to "enterospasm" and "hypertonic infant" as explanations of ordinary so-called colic.

In commenting on the use of a pacifier in treatment of infantile colic, a few excerpts from my paper on the rhythmic swing of the pediatric pendulum regarding the pacifier and some other things (*North Carolina M. J.* 12:93-97, 1951) might be in order:

I shall never forget my amazement when, in 1909, I saw the respected old Viennese pediatrician at whose feet I was sitting to hear the latest advances in pediatrics reach for a pacifier and pop it into the mouth of a youngster whose wails were disturbing his demonstration. The rest of that day's instruction was a total blank so far as I was concerned. I was convinced that *der guter Herr Professor* could not be up-to-date in other things when he was such an old woman as to resort to this archaic childhood indulgence.

In those days we employed the most ingenious devices to counteract what we *knew* was the reprehensible desire to suck. Elbow splints that prevented the child from bending his elbow and putting his thumb in his mouth—at the risk of producing a stiff elbow; adhesive plaster wound round the offending thumb—disgusting as that became after a few hours *in situ;* applications of quinine solution—though before long the baby learned to take the bitter with the sweet and lick it off; a complicated maze of metal rings draped around the thumb—all these were tried, and usually found wanting. The meanest trick I ever saw played consisted in strapping a short piece of rubber tubing along the length of the thumb in order to introduce a mouthful of air and so spoil the solid satisfaction of sucking that every smoker understands and enjoys so thoroughly. . . .

Yet within these short years the pendulum has swung back. It is now stated categorically that the denial of thumb-sucking spells frustration, and that virtually every personality defect can be traced back to the time when the youngster was denied the divine right of suction, whether upon breast, rubber nipple, thumb, or—at last coming back into its own—the medically abhorred sugar tit. . . .

I readily admit that our earlier fulminations against thumb-sucking, and the orthodontal difficulties it might produce, were too extreme. Yet it is not

difficult to imagine the effects of the leverage produced on the infant's superior and inferior maxillae when the forearm acts as the long arm of the lever, the thumb or finger as the short arm, and the front of the lower jaw as the fulcrum. Furthermore, it is impossible to sterilize the pacifier effectively, or the thumb at all.

Nevertheless, we have all seen thumb-sucking infants who grew up to have beautifully regular teeth; and, since we pediatricians have at least partially cleaned up America's milk supply, colitis has become increasingly rare, despite continuation of the unsanitary habit of thumb-sucking. Our reluctance to admit these facts made us responsible for one of the most common household tragedies of yesterday, and even of today—namely, the increase of thumb-sucking, caused by the nervous nagging of parents whose efforts to break the child of his habit simply confirmed it, and kept him from curing himself.

I prefer the golden mean in this instance as in the other two. . . . I do what I can, short of emotional harm to the child, to help him discontinue the habit. Better still, I do my best to keep him from starting it in the first place.

I suggest that the mother gently remove the thumb or finger from the baby's mouth when he first begins placing it there after a feeding or when he is going to sleep—always cautioning her against agonized admonitions and irritated handslappings. If the habit has become fairly well established, I do not hesitate to advise a simple elbow cuff extemporized from a cereal box. It should be loose enough to permit the elbow to bend, but not enough to allow the hand to be brought to the mouth. This device should be used only as the mother finds necessary, and always as a help, not a punishment.

These simple measures may be expected to fail, of course, if the child has resorted to the habit out of loneliness, neglect, boredom, jealousy, unhappiness, or from some other cause.

Before any experimental work could convince me that my own experience and that of so many sound observers is in error, I should feel justified in advancing three postulates:

- More than the 28 cases given by Drs. Levine and Bell for confirmation. One of the weaknesses of conclusions drawn from medical research is its numerical inadequacy, which would leave a statistician or an insurance actuary absolutely unmoved.
- An accurately paired set of controls, without which convincing conclusions are impossible.
- A diagnosis of true colic rather than of hunger, by the simple expedient of letting the babies try to quiet their overactive gastric contractions by filling their stomachs with as much food as they themselves would take, not merely the amount calculated as sufficient to satisfy their estimated theoretic nutritional needs.

I should also want to know just what sort of "self-demand feeding schedules" were being followed, since so many ways of practicing self-demand are followed by different pediatricians. If these 28 babies never really filled their stomach but took only enough to stop hunger pangs, I can readily imagine that the pacifiers might serve an undesirable purpose in stilling the appetite signals on which self-demand depends for its efficient working.

I should like to see some such unbiased experimental study made in order to try to solve this age-old problem of what colic really is. I shall have to see a better case made for the long-tabooed pacifier before I begin to prescribe it for babies with either hunger or colic.

FRANK HOWARD RICHARDSON, M.D.
Asheville, N.C.

Duodenostomy with Subtotal Gastrectomy*

Comment invited from
M. M. Zinninger, M.D.
H. Glenn Bell, M.D.
Joel W. Baker, M.D.
Arthur W. Allen, M.D.

► TO THE EDITORS: Regarding the method of duodenostomy described by Drs. James T. Priestly and Donald B. Butler, may I say that when I first heard this method discussed it appealed to me as a very rational way to handle the occasional situation in which it was difficult or even impossible to close the duodenal stump after partial gastrectomy.

I, therefore, called the procedure to the attention of the residents at our hospital and to a number of other surgeons in this community. Since that time one of our surgical residents has had occasion to employ this method and has found that it worked out just as Dr. Priestly indicated. I have not found an occasion in which use of this method has been necessary and, therefore, have had no personal experience with it. I would, however, use it if it seemed desirable.

M. M. ZINNINGER, M.D.
Cincinnati

► TO THE EDITORS: Concerning the merits of a duodenostomy when the duodenum cannot be closed during a gastric resection, I would like to say that we have had experience with this in only 2 instances, but it has seemed to work extremely well. The method might well be used more frequently. It may help to prevent the occasional blowout of the duodenal stump following such a procedure as gastric resection.

I believe that the men at the Cleveland Clinic and perhaps at Ohio State University have reported on this technic also.

H. GLENN BELL, M.D.
San Francisco

► TO THE EDITORS: Duodenostomy in the difficult closure of the duodenal stump following gastric resection, as advocated by Drs. James T. Priestly and Donald B. Butler, like other procedures of limited application, may solve the surgeon's dilemma in an occasional instance and is worth a place in our reserve bag of tricks.

In general, we feel that the difficult duodenal stump closure results from a mistaken impression of what constitutes a proper and adequate resection in benign chronic duodenal ulcer. The surgeon believes that he must resect the duodenal ulcer regardless of how deeply it penetrates the pancreas or how contracted the duodenum, and the remaining duodenal stump is hazardous to close.

Actually, there is no physiologic obligation on the part of the surgeon to resect the duodenal ulcer per se. Gastric resection in benign ulcer is directed at an ulcer diathesis and not at the single ulcer, which is admittedly evanescent in location. We remove the duodenal ulcer only if its resection technically facilitates closure of the duodenal stump.

While the various exclusion operations have proved clinically inadequate and technically difficult, there is a simple method of gastric resection which permits resection of the

*MODERN MEDICINE, May 1, 1951, p. 67.

Figure 1

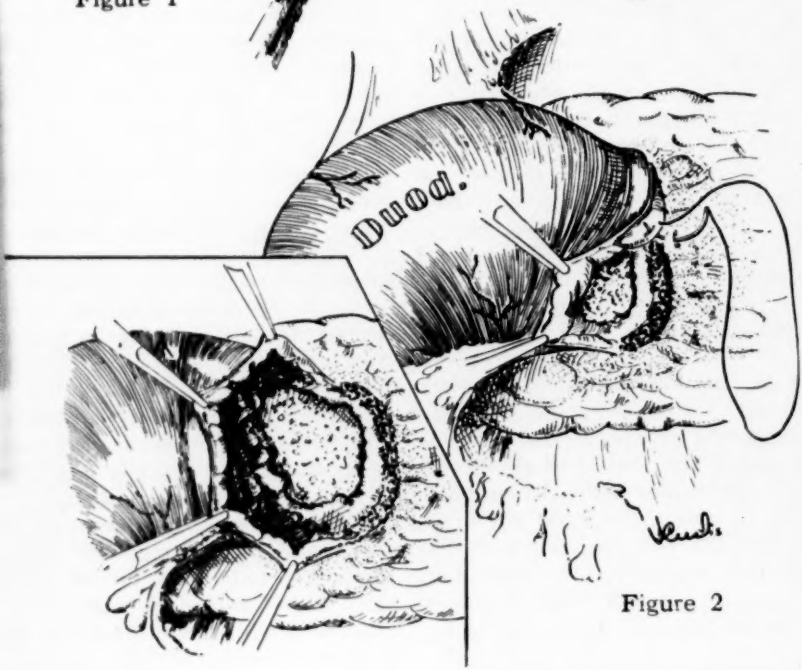

Figure 2

entire distal end of the stomach, including the pylorus, and yet makes the most deformed duodenum easy to close. I refer to the method of simple transection through the very site of the ulcer and the use of the fibrous margin of the ulcer and the thickened pancreatic capsule for the closing sutures (Figs. 1 and 2).

There is then no question of injury to the common bile duct, but likewise there is no hazard of injuring the head of the pancreas—a consideration which is often neglected by those discussing the subject. We have seen lesions which have ulcerated the biliary papilla, but we also have seen frank ulcerations deep into the pancreas, exposing the pancreatic duct. A patient was referred to us who had both a biliary and a pancreatic fistula following gastric resection for duodenal ulcer in which a competent surgeon had felt obliged to resect such an ulcer. Had he, instead, followed the principle depicted here, the eroded ducts would still have drained into the duodenal stump, the stump would have properly healed and no fistula resulted.

It is not generally appreciated that the dense scar resulting from the penetrating ulcer can be used for a secure closure. In fact, the denser this scar, the easier the closure. By the same token, the ulcer that creates the most hazard for those who would insist on resection of the duodenal ulcer becomes one of the easiest to close by utilizing this principle.

It is important to make sure that the transection has been done beyond the pylorus. For this reason, we always make a frozen section of the distal end of the resected specimen to insure that the duodenal mucosa has been transected and to have as a matter of record should the adequacy of the resection be questioned later. It is not necessary to mention that we feel that at least two-thirds of the stomach should be resected and that in gastric ulcer it is essential to remove the ulcer for fear of malignant change.

This principle of closure is not original with us, but has proved both safe and adequate in our hands. Since in our clinic we operate on but 20% or less of the patients we see for chronic duodenal ulcer, it is evident that the majority who reach the operating room have these technical problems. The method outlined is physiologically sound and has been proved clinically adequate against recurrence. We have used it many times, and have yet to see a leaking duodenal stump where it has been employed.

JOEL W. BAKER, M.D.

Seattle

► TO THE EDITORS: There are occasions when the surgeon cannot accurately estimate the depth, penetration, and extent of a duodenal ulcer. Even after excellent exposure, the dissection may lead one into a situation that makes adequate closure of the duodenal stump hazardous.

A few years ago, C. E. Welch revived the idea of closure around a catheter under these circumstances. He and I have used this "out" for 5 patients and all have survived. This method is vastly superior to sump drainage with or without suction.

ARTHUR W. ALLEN, M.D.

Boston

Diagnostix

Here are diagnostic challenges presented as they confront the consultant from the first clue to the pathologic report. Diagnosis from the Clue requires unusual acumen and luck; from Part II, perspicacity; from Part III, discernment.

Case MM-198

THE CLUE

ATTENDING M.D: We would like you to see a 58-year-old man in the medical ward who has been in the hospital for five days because of sudden onset of abdominal pain. He has had diabetes for five years, auricular fibrillation, and moderate heart failure for three years. He was admitted to the hospital five months ago with cardiac decompensation, but the condition has been moderately well controlled until the abdominal pain started.

VISITING M.D: What was the onset?

ATTENDING M.D: He became nauseated, vomited once, and the sharp right lower quadrant pain developed within an hour. It is aggravated by eating. His dyspnea became pronounced and orthopnea appeared. He said the urine output became less. He had temperature of 100° F. and white blood count of 9,400 on admission. His pain and heart failure were reasonably well controlled until this morning, when the pain became most excrutiating and he had chills. The temperature is 102.4° F. now.

VISITING M.D: *(Enters the room and examines the patient, who is in an oxygen tent)* I note that the patient is slightly icteric. There are some râles in the lower portion of both lungs. Blood pressure is 185/110; the heart is enlarged to the left; pulse is 160 and irregular. The abdomen is distended and I find tenderness in the right lower quadrant, but no rebound tenderness. The liver is 3 fingerbreadths below the right costal margin and is not sensitive. The patient has pitting edema of the ankles, a rough systolic apical murmur. I note nothing suggestive in the neurologic, rectal, or pelvic examinations.

PART II

ATTENDING M.D: Do you think the man's condition is entirely secondary to the heart failure and auricular fibrillation?

VISITING M.D: Tell me more about the present medication and treatment. What did the electrocardiogram show?

ATTENDING M.D: He is taking digitoxin, morphine for the pain, 400,000 units of penicillin twice a day, barbiturate sedatives, and a mercurial diuretic which has increased the flow of urine. Despite this regime he has paroxysmal nocturnal dyspnea. The electrocardiogram shows left axis deviation and auricular fibrillation but

no evidence of coronary occlusion.

VISITING M.D: What about roentgenograms, stool tests, and a more detailed history?

PART III

ATTENDING M.D: The chest roentgenogram shows an enlarged left heart. The film of the abdomen, made in the upright position, reveals no air under the diaphragm. The stool shows no blood.

VISITING M.D: I see that you suspected a ruptured viscus. I wonder why an exploratory operation hasn't been done?

ATTENDING M.D: The state of cardiac decompensation seemed too serious a surgical hazard. There was some feeling that he might have mesenteric thrombosis.

VISITING M.D: Any history of rheumatic fever?

ATTENDING M.D: He had fever with migratory polyarthritis at the age of 25 and perhaps rheumatic fever at 5, although that is uncertain. Otherwise he had the usual childhood diseases. The diabetes has been well controlled by diet and 15 units of regular insulin in the morning. The exertional dyspnea and ankle edema appeared three years ago and, at that time, his blood pressure was 180/110. He was given digitalis, a salt-free

"It's a program on how to avoid doctor bills."

diet, and mercurial diuretics as needed.

VISITING M.D: The cardiac situation can be summed up by saying that the man probably has rheumatic mitral stenosis. The hypertension is a moderately severe complication but is probably relatively unimportant except in accentuating the heart failure. I doubt that the man has a mesenteric thrombosis because the pain is localized in one portion of the abdomen and the course in the hospital has been relatively long. The patient now has a fever and heart failure with profuse sweating and severe pain. What is the lab data?

ATTENDING M.D: The urine has 3+ albumin and no sugar, otherwise normal. Specific gravity is 1.012. Blood sugar is 100; hemoglobin, red and white counts, blood urea, and nitrogen are normal. Sedimentation rate is 40.

VISITING M.D: I note particularly that urea is not retained, although albuminuria and a low specific gravity were found. I do not believe this man has Kimmelstiel-Wilson disease. More likely he has arteriosclerosis of the vessels of the kidney associated with generalized arteriosclerosis incident to diabetes and age. This is a very difficult case. We already presume the nature of the cardiac lesion. He has had an acute abdominal catastrophe and associated increased circulatory failure. The liver is enlarged, not tender, probably because of the heart failure. Although he may have an embolus in a low kidney or in the mesentery in the lower quadrant, I believe the more hopeful diagnosis would be acute appendicitis . . .

PART IV

VISITING M.D: We can't wait for the man to die. Call the surgeon and have his opinion.

SURGEON: *(Later)* I believe the sudden onset of the chills and worsening of the pain resulted from acute perforating appendicitis. The surgical risk in a chronically ill person is great, particularly with heart failure. With the reassurance that this patient did not have a recent myocardial infarction, we are perfectly justified in opening the abdomen. The main anesthetic problem is to give plenty of oxygen. The jaundice appears to result from chronic passive congestion of the liver. *(At operation, an acutely inflamed appendix, which has perforated, is found.)*

VISITING M.D: *(Later)* Acute appendicitis with or without perforation is always a possibility when an elderly patient treated for some chronic disease has abdominal pain. Localized abdominal pain, particularly with sudden onset and nausea, is the clue.

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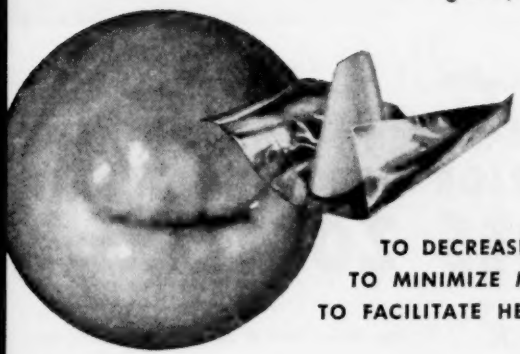

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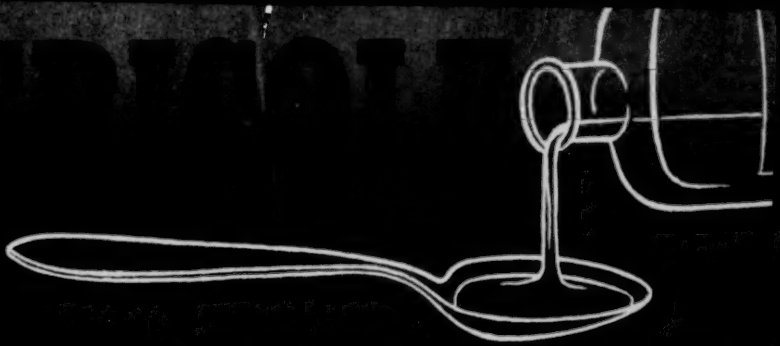

IN FAULTY FAT METABOLISM OF THE HEART • LIVER AND KIDNEYS

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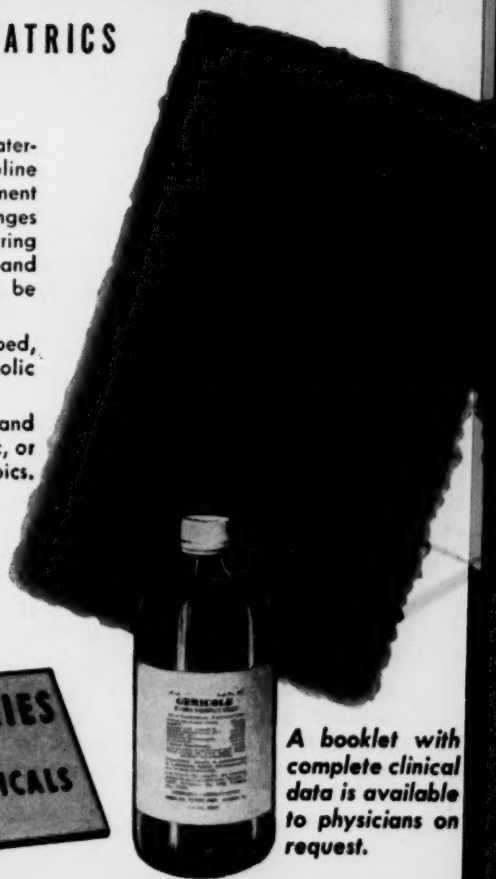
Dosage is easily varied for infants, children and elderly patients to provide massive, therapeutic, or supplementary amounts of vitamins and lipotropics.

(1) Varco, R. L.: Surgery, 19:304 (March) 1946 "... the fatty liver ... is unquestionably of great prognostic significance." (2) Philpott, N. W., et al.: Am. J. Obst. & Gynec., 57:125 (Jan.) 1949. (3) Editorial: Ann. Int. Med., 22:615 (April) 1945. (4) Best, C. H., Mac Lean, D. L., and Ridout, J. H.: J. Physiol., 83:275 (Feb. 9) 1935. (5) Cohnheim, J.: The New Sydenham Society London (1889).



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Short Reports

Dermatology

Zirconium for Ivy Poisoning

Urushiol, the toxic factor in poison ivy, is neutralized by zirconium even after fixation in the skin. Application of zirconium hydrate therefore prevents or stops development of lesions. Drs. G. Arnold Cronk and Dorothy E. Naumann of Syracuse University, N.Y., employ a combination of 4.37% zirconium oxide, 13.46% stearic acid, 1.86% potassium as hydroxide, 2.28% glycerine, and 78.03% water and carbon dioxide. Applied twice a day, the ointment relieves itching within twenty-four hours, and lesions soon regress. Treatment was effective in 39 of 46 cases, or 85%, with no undesirable local or systemic reactions.

J. Lab. & Clin. Med. 37:909-913, 1951.

Therapeutics

Sodium Gentisate Treatment

Analgesic potency of sodium gentisate is not only equivalent to that of aspirin but the drug is less harmful and therefore more widely useful. Single or repeated oral doses of 0.3 to 0.6 gm. of sodium gentisate control pain in about 71% of hospital cases, report Dr. Robert C. Batterman and associates of New York University, New York City. Therapy was evaluated for 97 hospitalized and ambulatory persons. Satisfactory analgesia was attained by 57% of the ambulatory patients who took several daily doses for a number of weeks. Minor reactions, consisting chiefly of transient nausea, were observed in 11% of the ambulatory patients.

Federation Proc. 10:278, 1951.

Irradiation

Radioactive Cobalt Suture

Fine nylon tubing containing radioactive cobalt wire can be sewn into any treatment site accessible to a needle. The plastic filters out most of the beta particles and bends readily into circular or irregular patterns. Dr. Joseph L. Morton and associates of Ohio State University, Columbus, prefer wire 0.508 mm. in diameter cut in 3-mm. sections with gamma ray intensity equaling about 1 millicurie of radium per linear centimeter. The nylon tubing is loaded with cobalt and aluminum spacers, boiled, and drawn fine at the ends for threading. Guide needles are inserted in the desired pattern, and the suture is quickly slid into place. The loaded tubing is easily implanted into the cheek, lip, tongue, cervical or pelvic nodes and near the bronchi, bones, or great vessels. About 1.2 mEq. is usually delivered in not less than a week. On completion of therapy, the tubing is removed, nylon is dissolved in cresol, and the cobalt recovered for further use.

Radiology 56:553-560, 1951.

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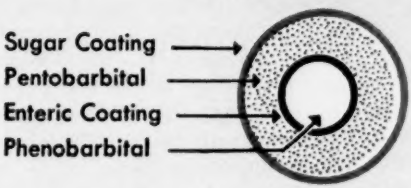

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Hematology

Drug for Leukemia

Survival time of mice with leukemia is doubled by triethylene melamine, which resembles the nitrogen mustards in general effects. In mice with the Ak4 strain of the disease observed by Dr. Joseph H. Burchenal and associates at Memorial Cancer Center, New York City, TEM produced severe leukopenia and greatly delayed visceral infiltration with white blood cells. A single massive dose of TEM or closely related compounds when the white count was high caused a rapid fall. All injections were given intraperitoneally in 0.2 cc. of saline solution three times a week for 10 doses, in the maximum amount tolerated, 0.75 mg. per kilogram of weight.

Blood 6:504-512, 1951.

Hematology

Chronic Leukemia Therapy

Triethylene melamine appears useful in some cases of chronic leukemia. Of 17 adults treated at Goldwater Memorial and Bronx Veterans Administration hospitals, New York City, 4 had excellent response and 6 moderately good, 6 were unimproved, and 1 became pancytopenic and died. Doses of 10 to 125 mg. were given for ten to two hundred days, with individual courses of 10 to 20 mg. Dr. Leo M. Meyer and associates noted leukocyte reduction in 13 instances, regression of enlarged lymph nodes in 5 of 11 cases, of liver in 4 of 9, and of spleen in 10 of 16.

Federation Proc. 10:324, 1951.

Nutrition

Fattening Drink

Homogenized peanut oil, a sweet milky fluid containing 2,000 calories per pint, helps to restore weight and energy in conditions of undernutrition. Dr. Frederick J. Stare of Harvard University, Boston, reports that the preparation, Lipomul, has been given to 300 patients and 50 healthy volunteers, some of whom gained ½ lb. daily on a single glass per day. The beverage may be used in cases of malnourishment before or after surgery or for anorexia and emaciation associated with tuberculosis, arthritis, and other diseases. Injected intravenously, 1 qt. of diluted emulsion supplies 1,000 calories.

Venereology

Cortisone for Syphilitic Eye Disease

Though not curative, cortisone may control inflammatory and exudative ocular reactions of congenital or acquired syphilis. Local treatment during hypersensitive episodes will at least reduce scarring and perhaps forestall serious loss of vision. At the General Infirmary of Leeds, England, Dr. Gordon O. Horne employed 5 mg. in 1 cc. of physiologic saline solution, or in severe conditions 25 mg. per cubic centimeter, for 5 patients with iridocyclitis or acute interstitial keratitis. A drop was instilled at first every three hours day and night, then, on improvement, less often. Results were impressive in all cases.

Brit. M. J. 4718:1289-1291, 1951.

In coronary artery disease...

BALANCE

cholesterol - phospholipid

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"It is hypothesized that the levels of serum cholesterol and serum phospholipids are less important in coronary artery disease than is the ratio of cholesterol and phospholipids."[1]

"...the lipotropic agent choline was effective in significantly reducing the mortality rate due to recurrent coronary thrombosis...in...215 patients with proved coronary atherosclerosis."[2]

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Other Indications: Hepatic cirrhosis, diabetic hypercholesterolemia and liver dysfunction, and other disorders of fat metabolism.

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Thiamine Citrate (47% choline base)	5 Gm.	Choline Bitartrate (equiv. to 100 mg. choline)	188 mg.
Inositol	2 Gm.	Inositol	125 mg.
Thiamine Hydrochloride	3 mg.	Thiamine Hydrochloride	1 mg.
Riboflavin	2 mg.	Riboflavin	0.5 mg.
Nicotinic Acid	20 mg.	Nicotinic Acid	5 mg.
In a flavored, sugar-free vehicle			

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Thiamine HCl	2 mg.	Iodine	0.15 mg.
Riboflavin	2 mg.	Iron	3.33 mg.
Pyridoxine HCl	0.5 mg.	Manganese	0.33 mg.
Niacinamide	20 mg.	Molybdenum	0.2 mg.
Ascorbic Acid	37.5 mg.	Magnesium	2 mg.
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		Potassium	1.7 mg.
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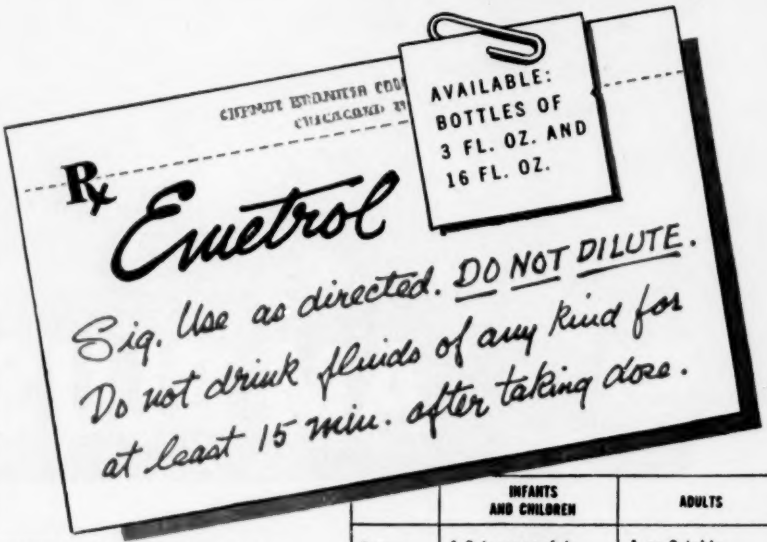

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Before and after anesthesia	1-3 teaspoonfuls 15-30 minutes before anesthesia and as soon as feasible after operation	1 or 2 tablespoonfuls at same intervals as for children
Early pregnancy		1 or 2 tablespoonfuls on arising, repeated every three hours or whenever nausea threatens
Epidemic vomiting	1 or 2 teaspoonfuls at 15-minute intervals until vomiting ceases	1 or 2 tablespoonfuls at 15-minute intervals until vomiting ceases

1. Bradley, J. E., et al.: J. Pediat. 38: 41 (Jan.) 1951

LITERATURE AND SAMPLES TO PHYSICIANS ON REQUEST

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Endocrinology

Adrenal Reaction to Stress

In healthy, well-trained athletes, emotional strain with or without muscular activity stimulates the adrenals to a highly effective response. This mechanism of adaptation was observed in college oarsmen by Dr. Albert E. Renold and associates of Harvard University, Boston. Subjects with unusually good physical and emotional reserves had fairly high blood eosinophil levels after trial races. But after a close intercollegiate contest, counts dropped to extremely low levels in all men, including the coxswain and the coach.

New England J. Med. 244:754-757, 1951.

Carcinogenesis

Nickel Sarcomas

Powdered nickel injected parenterally stimulates malignant growth in rats, reports Dr. W. C. Hueper of the National Cancer Institute, Bethesda, Md. Cancerous reactions are not elicited by injections of the metal in dogs, rabbits, or guinea pigs. A total of 70 rats received injections. The metal was introduced in doses of 0.05 cc. of a 25% suspension in lanolin into femoral and pleural cavities and 0.1 cc. of a 12.5% suspension into the nasal sinuses. Of the 24 that died within seven to fourteen months, 10 had spindle-cell, round-cell, and giant-cell sarcoma, which usually started from hyperplastic periosteal tissue at the injection site. Significant growth apparently does not result from chromium, chromite ore, beryllium, arsenic, uranium, or asbestos.

Cancer Research 11:257-258, 1951.

Physiology

Skin Graft Fixation

Hyaluronic acid, the chief component of intercellular cement, will strengthen fixation of sutured skin grafts. Erythema, contraction, and sloughing of transplanted tissue are much reduced, and the new patch merges imperceptibly with the surrounding area. For trials on rats, Dr. Harry H. LeVeen and associates of Loyola University, Chicago, used hyaluronic acid extracted from human umbilical cords. A 1% solution of the potassium salt in physiologic saline solution was prepared, and full-thickness skin grafts 3 cm. square were transferred from the abdomen to the back. The undersurface of the grafts and the receptor site were painted with the solution, and grafts were sutured in place. In three months, hair growth was abundant in the transplant. Growth was incomplete on grafts with which hyaluronic acid was not employed.

Surgery 29:743-747, 1951.

Hepatology

Liver Dysfunction with Diabetes

Hepatic disturbance is associated with diabetes mellitus too often to be a coincidence, believes Dr. Julius Pomeranze of the New York Medical College, New York City. When liver function was determined by means of bromsulfalein technic, only 2 of 40 healthy subjects retained any dye forty-five minutes after injection, and retention was less than 4%. Of 162 diabetic subjects, 44 retained no dye, 25 retained 1 to 5%, and 93 retained more than 5%.

Bull. New York Acad. Med. 27:396, 1951.

For daytime *in effective*

Neohetramine is available as:

Tablets Neohetramine:
25 mg. bottles
of 25 and 100

50 mg. bottles
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25 mg. tablets
of 100 and 500

Syrup Neohetramine:
pint bottles
0.25 mg. per cc.

Cream Neohetramine: 2%
in 2 oz. tubes

alertness . . .

ragweed hay fever therapy

Drowsiness or diminished alertness can seriously impair concentration, coordination and efficiency. That's why, for daytime use by the active patient with ragweed hay fever, the choice of Neohetramine is doubly indicated: It (1) provides effective relief from rhinorrhea, itching and sneezing; and (2) offers a high degree of freedom from dangerous sedative effects. Indeed, with Neohetramine, compared to many other drugs, sedation is both less frequent and less severe.[1,3] Yet its usefulness is clinically equivalent to that of other preparations; and the drug may often be employed in cases intolerant to other antihistamines.[2] Dosage is 50 mg. to 100 mg. two to four times daily, depending on response, severity of symptoms and number of allergens present.

For patients who have difficulty swallowing tablets, for children, or for use as a vehicle, palatable Syrup Neohetramine, providing 6.25 mg. per cc., may be prescribed. Also available, for local application in the treatment of allergic and other pruritic dermatoses, is Cream Neohetramine 2%.

Professional samples will be sent upon request.

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References:

1. New and Nonofficial Remedies, American Medical Association, Chicago, 1950, P. 29.
2. Friedlaender, S. M., and Friedlaender, A. S.: J. Lab. & Clin. Med. 33:865 (July) 1948.
3. Schwartz, E.: Ann. Allergy 7:770 (Nov. Dec.) 1949.

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N, N-dimethyl-N'-p-methoxybenzyl-N' (2-pyrimidyl) ethylenediamine monohydrochloride. Neohetramine is an original and exclusive development of Nepera Chemical Co., Inc., an organization devoted to the development and manufacture of fine pharmaceutical products.

Hematology

Serum Iron in Women

As a rule, the iron content of serum decreases in women from youth to old age. Average values for 276 subjects of 17 to 86 years were calculated by Drs. Marilyn Chaloupka and Ruth M. Leverton of the Agricultural Experiment Station, Lincoln, Neb. Except for a moderate rise between ages of 50 and 60, levels steadily dropped from 125 to 93 μg. per cent. However, no important differences were observed in the mean hemoglobin of various age groups.

Federation Proc. 10:377, 1951.

Metabolism

Albumin Therapy

Advantages of blood transfusion without some of the hazards may be obtained by intravenous injection of human serum albumin and washed red blood cells. Since both sodium and fluid content are low, large quantities can be given in a short time without risk of heart failure. Dr. David State and associates of the University of Minnesota, Minneapolis, find that positive nitrogen balance can be maintained without other source of protein. Ampules, supplied by the American Red Cross, contain 25 gm. of albumin and 1 gm. of acetyltryptophane, diluted to 100 cc. with buffered aqueous solution. Doses of 1 gm. of albumin per kilogram of body weight are given with 270 to 300 cc. of red blood cells. Calories are supplied intravenously by 2,000 cc. per day of 10% glucose and 2,000 cc. of 5% glucose in distilled water. Vitamins are given intravenously, and drinking water is allowed. Concentrated albumin is not antigenic, seldom causes adverse reactions, and does not transmit the virus of serum jaundice.

Surg., Gynec. & Obst. 92:589-597, 1951.

Nutrition

Antibiotics and Growth

Increase of animal growth by antibacterial agents is probably due to an effect on the intestinal flora. A diet containing 100 mg. of aureomycin per kilogram did not affect coliform and lactic acid organisms of chicks, but 150- to 200-fold reduction of anaerobic bacteria was achieved. Dr. William L. Williams and associates of Pearl River, N.Y., observed no clear relation between growth and hemolytic clostridia, which represented only about 1% of the total anaerobes in the bowel.

Federation Proc. 10:270, 1951.

Oncology

Diagnostic Tumor Graft

Heterologous transferal of human tumors to the eyes of guinea pigs has been proposed for differentiating benign from malignant growths. According to Dr. Abraham Towbin of Ohio State University, Columbus, relatively few malignant lesions can be transplanted successfully. Of 100 neoplastic specimens placed in the anterior chamber of guinea pigs, only 2 grew actively after long latent periods. The stage of nidation persisted for ten days to four months in 9 instances; 89 implants steadily regressed.

Cancer Research 11:286, 1951.

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®DECUPRYL liquid — Solvent liquid base with "wetting agent" — preferred in ringworm of scalp, athlete's foot. Combes et al (J. Invest. Derm., 10:6, 1948) report "no other topically applied drug has approached the results obtained with this solution." • Supplied in 1 oz. bottles with brush applicator, and 4 oz. bulk bottles. Paint affected area twice a day. ***Prescription only.***

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Radiotherapy

Protection from X-rays

A flavonoid compound with the formula $C_{28}H_{32}O_{11}$ increases tolerance to deep radiation therapy and prevents development of erythema, find Dr. Isidore Arons and associates of the Harlem City Hospital, New York City. The material was tried on 42 patients with cancer of the breast, liver, rectum, or cervix or with pulmonary sarcoma. By lessening capillary injury, the substance protected animals exposed to lethal radiation. In rats, doses of 9 mg. of the flavonoid per 100 gm. of weight greatly reduced the damaging effects of bacterial polysaccharide on carcinoma.

Cancer Research 11:234, 1951.

Therapy

Antituberculous Drugs

Two compounds derived from niacinamide and related to Tibione have antitubercular activity. The effects on miliary infection of mice after intravenous inoculation and on confluent bronchogenic disease, produced intranasally, were observed by Drs. E. Grunberg and B. Leiwant of Nutley, N. J. The compounds were administered in food, and three weeks after injection the lungs were examined. For miliary disease, the thiosemicarbazones of nicotinaldehyde and isonicotinaldehyde were comparable to Tibione. But for bronchogenic infections, which are more resistant to such agents as PAS and niacinamide, the test compounds were potent in much lower doses than are required with Tibione.

Proc. Soc. Exper. Biol. & Med. 77:47-50, 1951.

Chemotherapy

Drugs for Poliomyelitis

Compounds of a 2-hydroxy-1, 4-naphthoquinonimine series have activity against MM or Columbia SK poliomyelitis virus. Dr. R. J. Schnitzer and associates of Nutley, N. J., observed effects in mice of Ro 2-3532, an orange red substance which is representative of the compounds in the series. A single injection into the abdomen after intraabdominal infection prevented death of 80% of mice. The material apparently interacted directly with the virus and perhaps prevented passage to the cells in which multiplication occurs. A single subcutaneous dose protected about 50% of the animals, but disease induced by injection into the brain, muscle, subcutaneous, or plantar regions was not affected.

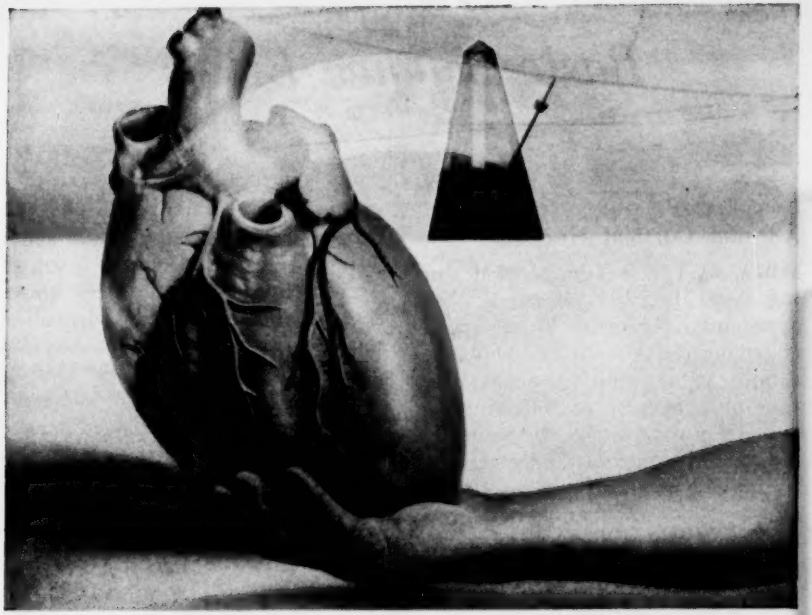
Proc. Soc. Exper. Biol. & Med. 77:182-187, 1951.

Endocrinology

Antihistamine Effect of Cortisone

Constriction of blood vessels by histamine is much diminished in vitro by cortisone. Dr. Durwood J. Smith of the University of Rochester, N.Y., employed Smith and Syverton's technic in measuring reactions of isolated swine arteries. On addition of cortisone to the perfusate, the contractile response to histamine progressively decreased, in some cases to 10% of former strength. Effects of epinephrine and acetylcholine on the vessels were not changed by cortisone, but acetylcholine seemed to potentiate the antihistaminic influence of cortisone.

Federation Proc. 10:249, 1951.



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Basic Science Briefs

Endocrinology

Adrenal Cortical Hormone

When ACTH is administered during good health, compound F is apparently the only hormone secreted by the adrenal. Metabolic reactions in a group of people may vary only because of differences in end-organ response to the same steroidal substance. Dr. Jerome W. Conn and associates at the University of Michigan, Ann Arbor, noted effects of both free F and the acetate given orally and intramuscularly to a young woman. All doses were 400 mg. daily. Changes in urinary sodium, chloride, potassium, 17-ketosteroids, and other materials as well as blood components were essentially those expected from ACTH when free F was given orally and intramuscularly and compound F acetate was given orally. Compound F acetate injected into muscles was relatively inactive.

Science 113:713-714, 1951.

Endocrinology

Inactivation of Cortisone

Slices of liver, kidney, and spleen are able to neutralize cortisone, but muscle, brain, and blood serum cannot. Degradation capacities were compared by Drs. Jean Louchart and Joseph W. Jailer of Columbia University, New York City. From 100 to 250 μg. of cortisone was incubated for three hours with about 300 mg. of tissue slices in 5 cc. of Krebs solution. Tissues were homogenized, and the resulting suspension was injected into adrenalectomized mice and assayed by the general method of Venning and associates. Boiled tissues were employed as controls. Liver inactivated 73% of the hormone, kidney 61%, and spleen 78%.

Metabolism

Growth Hormone and Glycosuria

Highly purified growth hormone in large amounts increases the glucose excretion in alloxan-diabetic rats. When doses of 3 to 5 mg. per 100 gm. of body weight were given daily for several days, high levels of glycosuria persisting for some time after cessation of treatment were frequently noted by Dr. Jane A. Russell of Yale University, New Haven, Conn. In some susceptible animals, a single hormone injection was followed by permanent elevation of blood sugar. Several times as much growth hormone in proportion to weight is required to augment glycosuria in rats as is needed to induce diabetes in the cat or dog. The pancreatic reserves are apparently greater in rats, so that insulin secretion can be increased under test conditions.

Endocrinology 48:462-470, 1951.

Laboratory Diagnosis of Thyroid Disease

(Continued from page 62)

prompt creatinuria which even precedes an increase in the basal metabolic rate or other evidences of improvement.

In 1935, Richardson and Shorr suggested the creatine tolerance test as an aid in the diagnosis of the more atypical instances of Graves's disease. The object of the procedure was to tax the creatine-storing capacities of the muscles, a function which is impaired in hyperthyroidism.

The patient is placed on a creatine-free diet for four days. Such a diet must contain no fowl, fish, meat or meat products, cocoa, or chocolate. A twenty-four-hour urine specimen is collected on the third day for the determination of the spontaneous creatine and creatinine output. On the fourth day the patient is given 1.32 gm. of creatine hydrate dissolved in 180 cc. of water, and the urine is again collected for twenty-four hours and analyzed. In making the calculations, because of the loss of 1 molecule of water as water of hydration and another molecule of water in the conversion of creatine to creatinine, the 1.32 gm. of creatine hydrate is equivalent to only 1 gm. of creatine expressed as creatinine.

According to Shorr, evidence of a defect in the metabolism of creatine is indicated by [1] a spontaneous daily creatinuria above 50 to 60 mg. in twenty-four hours, [2] a retention of less than 70% of the ingested creatine, and [3] low output of creatinine per kilogram of body weight. With Graves's disease, one or more of the indexes are usually abnormal.

Either a spontaneous creatinuria or a decrease in the retention of ingested creatine occurs in a high percentage of patients with hyperthyroidism. Furthermore, the specificity of the test in Graves's disease is heightened by the disappearance of the spontaneous creatinuria and an increase in the retention of ingested creatine after administration of iodine to the patient.

In using the creatine tolerance test or the spontaneous creatinuria as an index of hyperthyroidism, certain pitfalls must be borne in mind. A spontaneous creatinuria frequently occurs in primary muscular disease. A spontaneous increase

(Continued on page 122)

NEWS ABOUT A BAUER & BLACK PRODUCT

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Women have long been waiting for a nylon elastic stocking that won't discolor—now* Bauer & Black *introduces it!

It has long been known that an elastic stocking of nylon would reduce your patients' resistance to wearing these aids. But until now, no way had been found to produce such a stocking that wouldn't discolor.

Now, that way has been found. The new Bauer & Black nylon elastic stockings do not discolor. They are cooler to wear, fit more smoothly, and are far less conspicuous. They are easier to wash, wear longer and have the open toe that prevents foot cramp.

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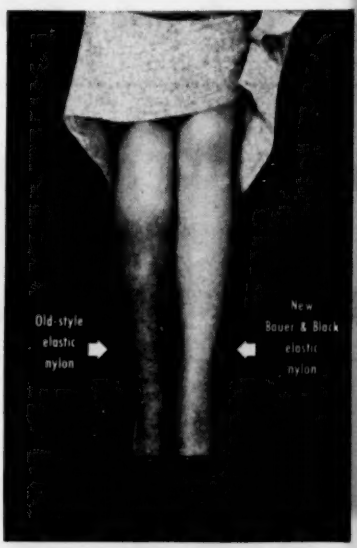

On the left leg is an ordinary nylon elastic stocking, showing discoloration that comes with use. On the right is the new Bauer & Black Nylon Elastic Stocking, which keeps its original color for the life of the stocking.

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PREPAR

in the urinary excretion of creatine alone occurs in instances of muscular wasting secondary to central nervous system disease, such as poliomyelitis. Disturbances in creatine-creatinine metabolism are encountered in a variety of nonspecific pathologic states, such as fever, acidosis, and starvation. Finally, the ingestion of iodides for therapeutic purposes or as iodized salts will inhibit the urinary excretion of creatine and increase the retention of orally ingested creatine in hyperthyroidism.

Magnesium Partition Studies

We have found that in hyperthyroidism a considerable increase occurs in the percentage of bound magnesium in the serum. Whereas in normal individuals the percentage of bound magnesium varies from 10 to 20%, in patients with Graves's disease this fraction is often above 25%. The increase in the percentage of bound magnesium is not associated with any changes in the serum concentration of total magnesium but occurs at the expense of the diffusible fraction.

With myxedema, in contrast to Graves's disease, all or almost all the circulating serum magnesium is in the ionized form. In patients with myxedema as well as in totally thyroidectomized dogs, the percentage of bound magnesium is extremely low and generally all the circulating magnesium is in the diffusable state. After the administration of thyroxin or of thyroid extract to patients with myxedema and to totally thyroidectomized dogs, the serum-bound magnesium increases to approximately normal levels. The administration of thyroxin to intact dogs will not affect this value, but injections of thyrotropic hormone to such animals cause an appreciable increase in the percentage of bound magnesium.

The technic for the determination of magnesium partition is too difficult and the results too uncertain at present for routine use in hyperthyroidism.

Circulation Time and Thyroid Function

In myxedema, even more than in hyperthyroidism, the vital capacity of the lungs is strikingly diminished in the absence of any evidence of congestive failure. The explanation of this phenomenon in hyperthyroidism is probably the marked

Modern concept of post operative analgesia

Tho increasing tendency to replace morphine, post operatively, with non-narcotic analgesia focuses new attention on Anacin. Long favored for rapid analgesic effect, Anacin is also preferred for the mildly sedative, long lasting action these tablets provide. Anacin is the *dependable* APC formula which consistently, day in and day out, is known to yield maximum efficiency with a minimum of untoward effects. If you would like to try Anacin this way, please write for samples on your letterhead.

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vasodilatation which occurs in this disease, with a resultant encroachment on the pulmonary bed.

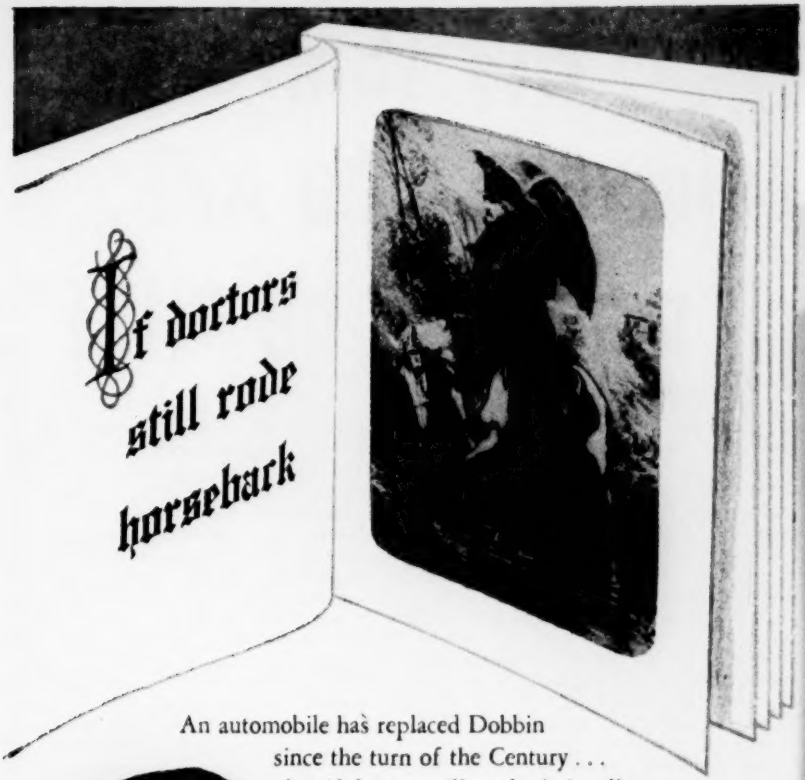
This explanation, however, does not obtain in myxedema. There is no close proportionate relationship between the degree of diminution in vital capacity and the degree of lowering of the basal metabolic rate. Furthermore, no significant change is apparent after therapy with thyroid extract. The velocity of blood flow is markedly reduced, being the antithesis of that observed in hyperthyroidism. As with the latter illness, marked variations are observed in the arm-to-heart circulation time, but the pulmonary circulation time is consistently slowed and corresponds to the degree of reduction of the basal metabolic rate. After suitable treatment with thyroid extract an increase occurs in the basal metabolic rate and a parallel decrease in the circulation time.

The measurement of the arm-to-tongue circulation time is of value in the confirmatory diagnosis of hyperthyroidism and, to a lesser extent, of myxedema. In frank overt thyrotoxicosis, the circulation time is almost always reduced, but in borderline instances and with congestive failure this finding is less constant and reliable. Hyperthyroidism should be suspected in patients with congestive failure whose circulation time is not adequately prolonged.

The arm-to-lung circulation time measures the integrity of the venous side of the systemic circulation and the right heart and is, in general, half the saccharine time. Hitzig suggested the use of ether for the measurement of the circulation time from the antecubital veins to the pulmonary capillaries. The technic consists of the injection of 5 minims each of ether and of normal saline into the antecubital vein. The length of time for the ether to become evident on the breath is noted. Baer found that the arm-to-lung ether time in 169 normal individuals varied from 3 to 9 seconds, with an average of 5.8 seconds.

For measurement of the arm-to-tongue time, which reflects the total heart efficiency, 5 cc. of a 20% solution of decholin, or 2.5 gm. of saccharine dissolved in 2 cc. of water, or 5 cc. of a 10% solution of calcium gluconate is injected into the antecubital vein. Decholin perhaps provides the sharpest end point, a bitter taste in the tongue readily perceived by all patients. Saccharine produces a sweet taste, also

(Continued on page 128)



If doctors still rode horseback

An automobile has replaced Dobbin since the turn of the Century . . . but if doctors still made their calls on horseback, you'd find the B-D YALE ANEROID MANOMETER, Jeweled-Bearing, in many a saddle bag. Built in a *single integrated unit,* it is a *rugged* instrument that would withstand the bumps and jolts of a canter or a trot and give a lifetime of service.

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B_{12} (EMF) believed to be APF; may also be "HGF"

Evidence has been accumulated to suggest that vitamin B_{12}—now generally acknowledged to be the pure erythrocyte-maturing factor (*EMF*) or anti-pernicious-anemia (*APA*) factor—may well be identical with animal protein factor (*APF*). APF has been found to be essential for normal growth, and probably for the maintenance of life, in many animal species including chickens, pigs, rats, and mice.

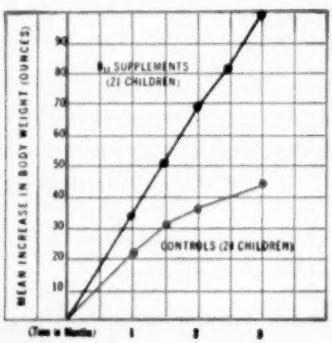
Now there is evidence to suggest that vitamin B_{12} is, or contains, an important human growth factor, or "*HGF*".

Wetzel and his associates[1] found that undernourished children grew much more rapidly on a good diet if vitamin B_{12} was also administered. *Chow*[2] found that in a group of chronically ill children, the experimental group (children who received vitamin B_{12} in addition to a good diet) exhibited a mean gain in body weight practically twice that of the control group (children who received a good diet—without supplementary vitamin B_{12}). This observation was made after three months' therapy with vitamin B_{12}.

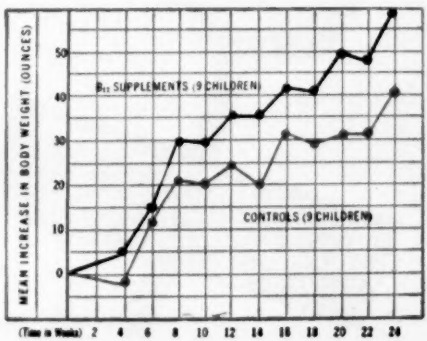
Chow[2] also reported on 18 healthy children in a foundling home. Nine of these children were each given a daily supplement of 25 micrograms of vitamin B_{12}; the other nine received placebos. It was found that the "mean gain in body weight of the children in the B_{12} group was consistently greater than that of the controls from the 4th week onward . . ."[2]

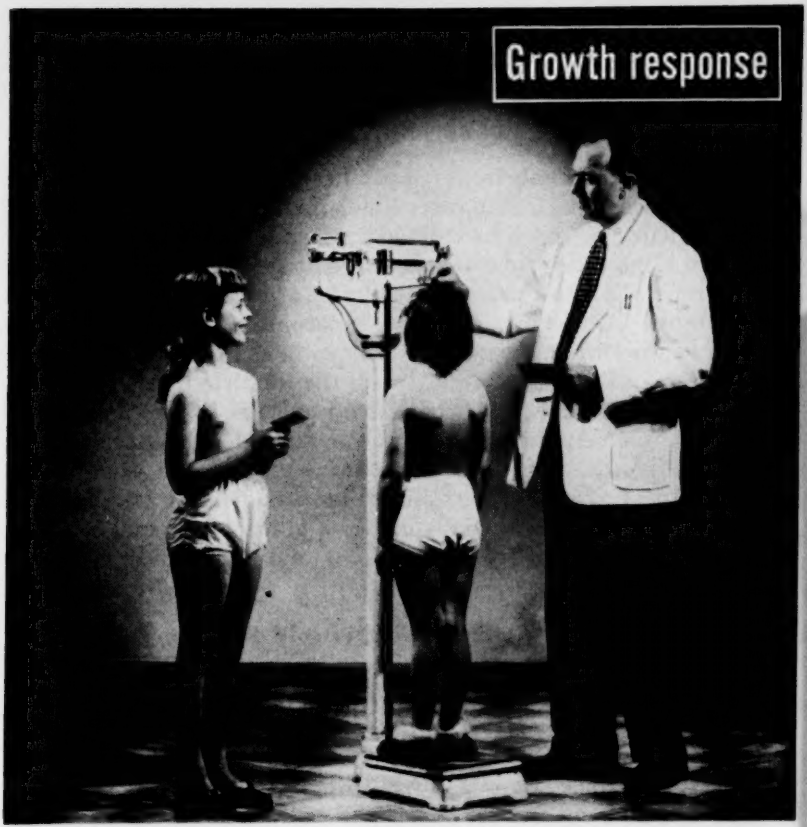
REDISOL® Tablets provide a convenient oral dosage form of vitamin B_{12}. Each tablet contains 25 micrograms of crystalline vitamin B_{12}. REDISOL Tablets are small—easy to swallow. They may be dissolved in aqueous fluids, or added to semisolid foods, just before taking. (Solutions of vitamin B_{12} lose potency if vitamin C is present.)

Growth response in chronically ill children. (After Chow[2]*)*



Growth response in clinically healthy children. (After Chow[2]*)*





Recent nutritional studies on children indicate that Vitamin B_{12} may play an important role in the promotion of growth.

Recommended Dose

to stimulate appetite and increase voluntary food intake in infants and children: 1 tablet daily.

for pernicious anemia (maintenance therapy only): 1 to 6 tablets daily.

for nutritional macrocytic anemia and macrocytic anemia of pregnancy: 2 to 4 tablets daily for one week.

for sprue: 2 to 10 tablets daily for one week or longer, depending on response.

Packaging

REDISOL Tablets are supplied in vials of 36.

1. Wetzel, N. C.; Fargo, W. C.; Smith, I. H., and Helikson, J.: Growth Failure in School Children as Associated with Vitamin B_{12} Deficiency—Response to Oral Therapy, Science *110*:651 (Dec. 26) 1949.

2. Chow, B. F.: Sequelae to the Administration of Vitamin B_{12} in Humans, J. Nutrition *43*:323, Feb. 1951.

Sharp & Dohme • Philadelphia 1, Pa.

REDISOL®

Soluble Tablets Vitamin B_{12} For Oral Administration

easily recognized, but is somewhat more cumbersome to use since the solution must be heated and cooled before injection. The end point with calcium gluconate is recognized by a warm sensation in the mouth. The arm-to-tongue time varies in normal individuals from ten to fifteen seconds. In all methods for measuring circulation time, the subjective factor of the patient's perceptiveness plays some role.

When the ether time is subtracted from the total circulation time, the result reflects the velocity of blood flow through the lungs. Although the latter, according to Blumgart, is most consistently influenced by changes in the basal metabolic rate, the available reports deal with the total circulation time in hyperthyroidism. When the thyrotoxicosis is overt, easily recognizable clinically, and uncomplicated by congestive failure, the total circulation time is apt to be rapid. But the results are not so consistent in the less well-defined instances, particularly with associated congestive failure. An accelerated circulation time will occur in fever and in beriberi heart without thyrotoxicosis.

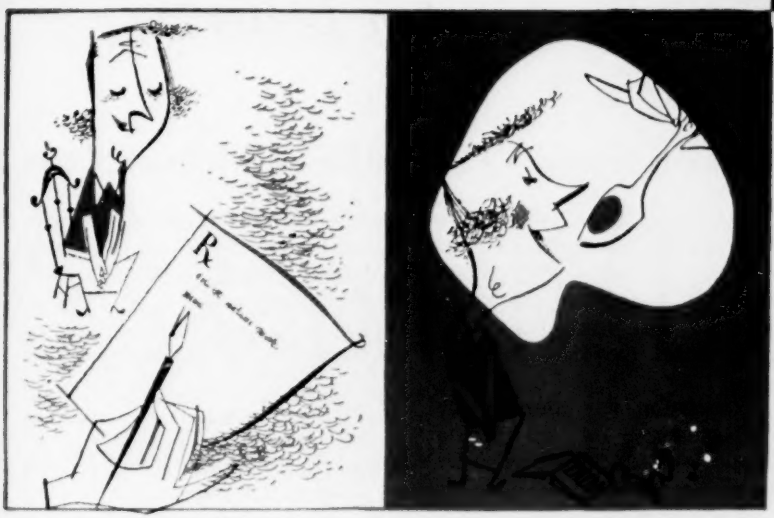
Therapeutic Trial with Lugol's Solution

Untreated patients with thyrotoxicosis have a dramatic response to iodine. Within ten to twenty-one days, the basal metabolic rate decreases considerably, the pulse slows, and an appreciable weight gain and marked improvement in subjective symptoms occur. This response to iodine is often used as a test for hyperthyroidism.

The advantage of the procedure is that no laboratory facilities are required other than perhaps the means of performing a basal metabolic determination. The disadvantages are that the test takes ten to twenty-one days and the result, at best, is crude and qualitative. The outcome is influenced by previous ingestion of iodine, which, with the almost universal use of iodized salt, may be an important factor. Finally, subjective factors may considerably influence the results.

The response in the borderline patient is even more equivocal than with the other tests of thyroid function. However, after the administration of Lugol's solution for several days, improvement in the cardiac status of a patient with unexplained congestive failure or recurrent auricular fibrillation strongly suggests hyperthyroidism.

Wyeth®



the patient with impaired fat metabolism will take "what the doctor orders"

. . . when you prescribe high potency lipotropic therapy in the form of pleasant-tasting WYCHOL syrup.

WYCHOL provides large doses of choline (3 Gm. choline *base* per tablespoonful) in synergistic combination with inositol (0.45 Gm.) in an unusually palatable raspberry-like flavored syrup. It invites the sustained adherence to the prescribed dietary regimen which is so important to therapy.

SUPPLIED: bottles of 1 pint.

Also available for supplementary and supportive therapy while the patient is away from home, Capsules WYCHOL: Bottles of 100.

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Washington Letter

Legislation to Improve VA Medical Service Progresses Slowly

Proposed new laws to improve the Veterans Administration medical program now are lumbering through Congress, retarded by the same type of bickering that has typified the VA dispute for the last couple of years.

The legislation was proposed by the Subcommittee of the Senate Labor and Welfare Committee, after a dogged, careful, and sympathetic study of the problem. The Subcommittee headed by Sen. Hubert Humphrey (D., Minn.) wants the following recommendations written into law:

• Revision of the organic act on which the VA medical program is based, "to leave no doubt whatever that the Congress intends the chief medical director to be the principal medical authority of the agency with primary authority to control, manage and operate its medical and hospital program."

The aim here is to put into writing every possible protection for future medical directors, so that there can never again be a Magnuson-Gray dispute, with each disputant pointing to the same law for vindication.

• Amendment of the law to provide for presidential appointment of the VA's chief medical director.

At present he is appointed by the administrator. Under this system it was possible for Administrator Carl R. Gray, Jr., to depose Medical Director Paul Magnuson, who had no legal right of appeal. If a presidential appointee, he could have been removed only by the President.

• Revision of the Special Medical Advisory Group to VA. The revamped group would be the Advisory Commission on Veterans Medical Care and members would be appointed by the President.

Represented on the commission would be the general public, veterans associations, and "eminent authorities in the health professions," including the members of the Deans Committees, which contributed so much to the excellent relations between VA hospitals and the medical schools.

"These glasses make the spots much clearer."

for the tense and nervous patient

with poor appetite

'Eskaphen B'

phenobarbital plus thiamine

Mild sedation by day, healthful sleep at night, *and* the appetite- and tone-restoring effects of therapeutic dosages of thiamine. These are the benefits of 'Eskaphen B'— S.K.F.'s superior presentation of phenobarbital.

'Eskaphen B' now is available in two useful dosage forms:

Eskaphen B Elixir—delightfully palatable, pleasant and easy-to-take

Eskaphen B Tablets—the convenient alternate dosage form

Each 5 cc. of the Elixir contains phenobarbital, ¼ gr.; thiamine hydrochloride, 5 mg., nearly three times the recommended daily allowance of thiamine. One Tablet is the dosage equivalent of 5 cc. of the Elixir.

Smith, Kline & French Laboratories, Philadelphia

'Eskaphen B' T.M. Reg. U.S. Pat. Off.

Furthermore, Congress is being asked to define responsibilities which would give the commission permanent and powerful influence over the entire VA medical program. The commission would continue to review all aspects of the medical and hospital program and report at least annually to the administrator and the chief medical director. Perhaps more significant, the administrator would be required to report regularly to Congress what the commission's recommendations were and what he did about them.

Whatever the merits of the proposed laws, so much heat and smoke have been generated that Congress quite possibly may decide to let the issue rest another year.

Even before the suggestions had been drawn up in the form of bills, Gen. Gray had started his public opposition and defended the position he had maintained through the years of argument with Dr. Magnuson.

Gen. Gray said that the senators ignored much of his testimony and that of his present medical director, Admr. Joel T. Boone, who tacitly or otherwise supported most of Gen. Gray's contentions. Gen. Gray also claimed that any extensive alteration in regulations governing the medical director's authority would be a "return to the division of authority and confusion which existed prior to the creation of VA."

Regarding most of the changes in regulations suggested by the subcommittee, Gen. Gray said the desired policies either already were in effect or were impractical.

Squabbling, name-calling, and alleged desk-rifling preceded actual issuance of the Humphrey report and to some extent detracted from the effect that excellent investigation might have produced.

Work of the subcommittee was held up for weeks while Gen. Gray made a tour of new VA hospitals. On his return, the Administrator was called before the committee and questioned for a second time.

Unexplained delay then developed. Suggestions were made that Chairman Humphrey was under political pressure to "whitewash" VA. During this period the alleged desk-rifling occurred.

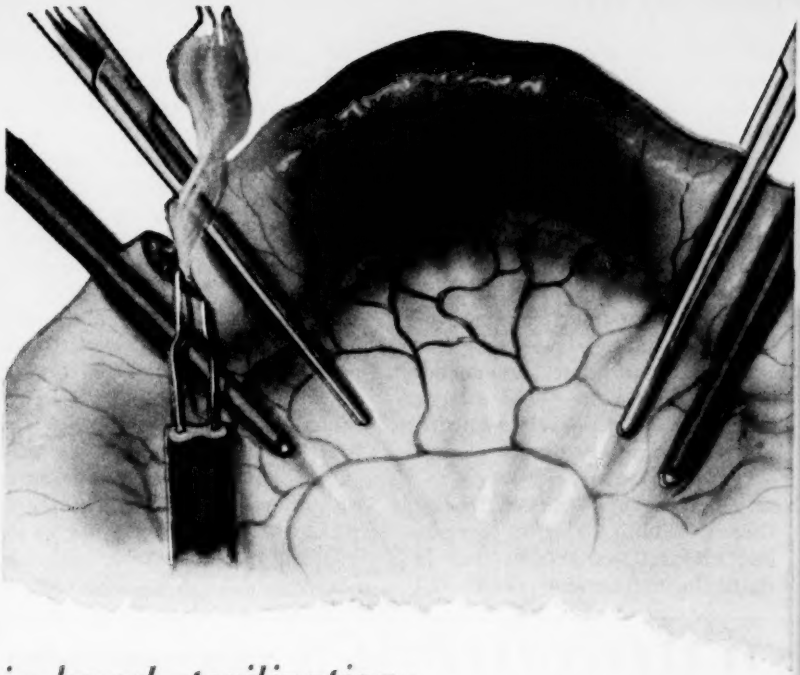
Melvin Snead, a committee employee, had written a preliminary report intended for confidential committee use. It was bluntly critical of Gen. Gray and had plenty of praise for Dr. Magnuson.

Before the subcommittee had approved the report, and even before one member had had a chance to read it, Mr. Snead reported that his desk was broken into and all his copies of the report removed. The same day that Mr. Snead made this discovery, the accusations in the report were leaked to a newspaperman. Publication of the story made it virtually certain that the final official report would not be a whitewash, even if that was desired.

When the committee finally released its findings, Mr. Snead confirmed that almost all his accusations and recommendations still were retained.

Washington Notes

Legislation for construction of 16,000 beds—which Veterans Administra-



in bowel sterilization:

"Terramycin... had a pronounced effect on the bacterial flora of the healthy and diseased bowel of man.... Its effectiveness as an antimicrobial agent in the preparation of patients for surgical measures on the bowel appeared unexcelled."

DiCaprio, J. M., and Rantz, L. A.: Arch. Int. Med. 86:649 (Nov.) 1950.

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ANTIBIOTIC DIVISION **Pfizer** CHAS. PFIZER & CO., INC., *Brooklyn 6, N. Y.*

tion says are not necessary—has drawn the opposition of the Hoover Committee's "National Doctors' Committee for Improved Federal Medical Services"; the doctors call the $335,000,000 idea "unwarranted and wasteful," out of date, and so on. All of which President Truman has been saying about the proposal since it was first introduced more than two years ago.

Children's Bureau, after recommending the equivalent of a master's degree for social workers, admitted that this group earns an average of $227 per month.

New *Directory of Venereal Disease Clinics,* Public Health Service, lists 2,267 clinics, reports that 42 states have prenatal blood test laws, 41 have premarital blood test laws.

Army has issued a fact sheet detailing its policy on authorization of civilian medical care for Army personnel. Helpful for physicians in contact with military personnel, it may be obtained from Defense Department's Office of Public Information.

The Nursing profession is encouraged by the new Defense Department policy statement on use of nurses. The plan provides that ward and dispensary nurses be relieved of routine housekeeping, clerical, supply, food service, and other nonprofessional duties, a policy which the nurses would like to see adopted for all civilian hospitals.

(Continued on page 138)

1-2 ACTION with C.R.I. GERMICIDE

An ampule makes a quart

1—Kills all common pathogens in 5 minutes

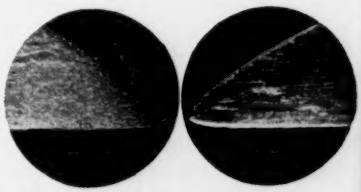
The figures below show how much a 1:100 working solution of C. R. I. Germicide can be further diluted and still retain its effectiveness against these bacteria in 10 minutes at 37° C:

Eberthella typhosa	50
Escherichia coli	40
Diplococcus pneumoniae	400
Neisseria gonorrhoeae	200
Hemophilus pertussis	35

2—Rust Inhibiting

C. R. I. Germicide permanently inhibits rust formation. The rust inhibitor is part of the formula—you add nothing further to the working solution.

Ampules—$10 per dozen; $2.75 for three.
Pint can—$12 (makes up over 12 gallons).



Photomicrograph of scalpel immersed in ordinary germicide 6 months shows pitting (left), and in C. R. I. Germicide 6 months, none.

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GERMICIDE

ADDED FEATURES

- Non-toxic, non-irritating—contains no phenol, formalin or mercury.
- Concentrated in 10 ml. ampules—dilute with hard or soft water.
- Safe to use on metal, rubber, plastic or glass.

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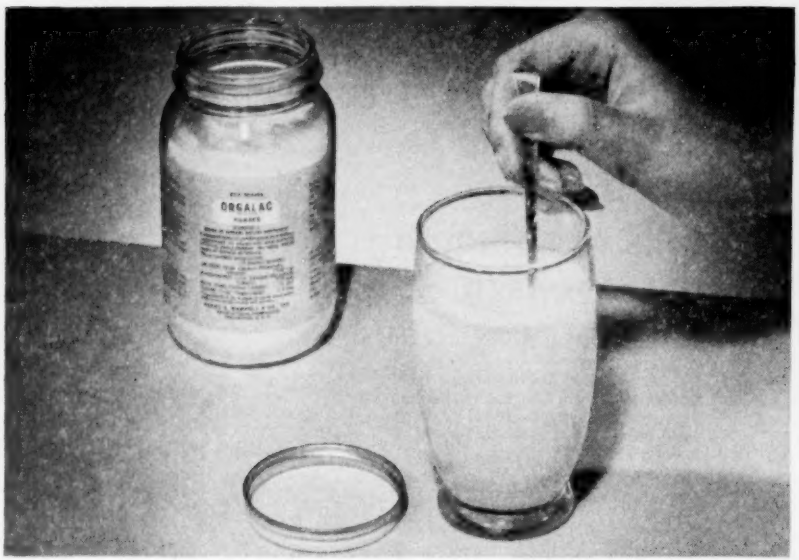
PROFESSIONAL SPECIALTIES, INC., 1330 DOLMAN ST., ST. LOUIS 4, MO.

New, Dual-Dose-Form Nutrient Provides Commonly Deficient Essential Minerals



Orgalac® Wampole is available as powder or as easily swallowed tablets. Both dose forms disperse quickly in water to provide readily assimilated calcium, phosphorus, iron and iodine for supplemental therapy during growth, pregnancy, and in dietary deficiency.

"THE THREE INORGANIC CONSTITUENTS COMMONLY DEFICIENT in the diet are calcium, iron, and iodine." (Bridges, M. A.: *Dietetics for the Clinician*. Lea & Febiger, 1941) *Orgalac*®, the new, dual-dose-form nutritional supplement, provides all three of these essential minerals, and phosphorus as well, since food phosphorus is not equally utilizable. Cereal phosphorus, for example, gives a wholly incorrect guide as to available phosphorus intake. And since cereals are a considerable factor in American diets, supplemental phosphorus is frequently desirable.

Orgalac supplies calcium, phosphorus, iron and iodine (organically combined) in two readily assimilated forms: powder, and tablets. Three rounded teaspoonfuls of *Orgalac* powder, or six *Orgalac* tablets provide:

Calcium (from calcium phosphate, tribasic)	1500 mg.
Phosphorus (from calcium phosphate, tribasic)	750 mg.
Iron (from ferrous lactate)	15 mg.
Iodine (from *Organidin*®*)	0.3 mg.

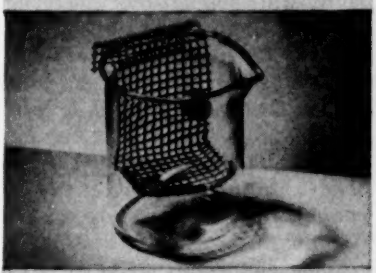
**Organidin* is the Wampole brand of iodine organically combined by reaction with glycerin.

Advertisement

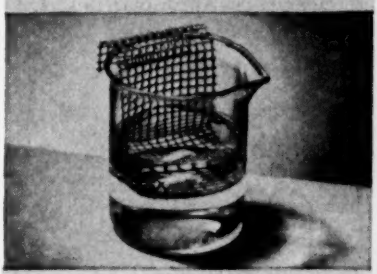
These quantities correspond to minimal daily requirements in pregnancy and lactation, and comfortably exceed those in geriatrics and pediatrics. *Orgalac* powder and tablets are specifically prepared as dietary supplements during growth, pregnancy and lactation, and old age. The physiologic importance of calcium, phosphorus and iron is widely appreciated; that of iodine is perhaps less well known. Curtis and Fertman (J.A.M.A. 139:28, 1949) point out that "General health problems ensuing from iodine deficiency are in great part the result of the importance of iodine in maintaining normal thyroid function. Sufficient iodine is requisite for normal growth . . . Iodine also plays a role in human and animal fertility and even in lactation. A preliminary report on the effect of iodine on failing lactation indicates that this condition is due not to a defective thyroid gland but to a deficient intake of iodine . . . It cannot be too frequently repeated that iodine plays an indispensable role in the human organism and an indisputable role in medicine. A sufficient amount of iodine intake is a biologic necessity."

ORGALAC tablets disperse as readily as the powder, provide calcium, phosphorus, iron and iodine (as *Organidin*) in well dispersed form for maximal availability. The tablets are supplied in bottles of 100. *Orgalac* powder is supplied in 250-gram jars. Literature and samples on request. HENRY K. WAMPOLE & CO., INC., Phila. 23, Pa.

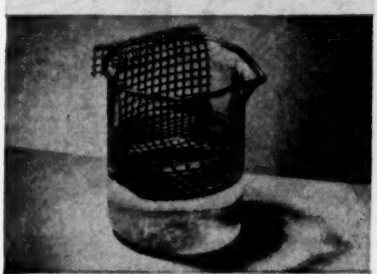
Orgalac **is supplied also as an easy-to-swallow, convenient-to-carry tablet.**



Simple demonstration shows how quickly *Orgalac* tablet breaks up. Here is dry, solid tablet.



The moment water covers *Orgalac* tablet it begins to disintegrate and fall through screen.



After 2 minutes the entire *Orgalac* tablet has crumbled and dropped to bottom of beaker.

Advertisement

Civilian Defense Administration, although pressing hard for greater enrollment in first-aid courses, also was foresighted enough to prepare a pamphlet which, in effect, tells untrained persons what not to do for disaster patients.

The first M.D. to be appointed head of U.S. Children's Bureau is Dr. Martha Eliot. The bureau probably will handle the emergency maternity and infant care program if Congress approves.

Federal Security Agency is being watched closely to see if it introduces propaganda into its new weekly television program *Everybody's Business* (A.B.C.); the announcement of the program said it would deal with the health, education, and family welfare.

Turned down once by Congress on a deficiency appropriation, Civil Defense Administration is back with a request for almost $200,000,000 for stockpiling of medical supplies by regions. The plan now is for Army to do purchasing with drug firms themselves rotating stocks.

The Federal Trade Commission has revised its procedures in an effort to clear up more cases. From now on a cited company may agree to a cease-and-desist order without admitting participation in unlawful practices. In the past, many companies have gone to great expense merely to avoid admission of "unlawful" practices.

Sen. James E. Murray, chairman of Labor and Welfare Committee, has started his own survey of physician distribution. He polled all governors, asking them to supply him with town-by-town listings of doctor-shortage and doctor-surplus areas.

"It's true that I'm a proctologist, but I am tired of hearing that my 'future lies behind.'"

Life's Weary Moments

Think of a gag that fits the illustration. For every issue a new gag is published and the author is sent $5. The Sept. 1 winner is

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to this blood-building, appetite-building iron tonic with B_{12} activity

plus... iron (ferrous gluconate) in tonic quantities

plus... essential B complex vitamins well in excess of known minimum daily requirements

plus... pleasant taste, too

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Forensic Medicine

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Prepared especially for Modern Medicine

PROBLEM: Was a hospital liable to a patient who was injured when catheterized postoperatively by an orderly, even if it was customary for orderlies to catheterize patients? The orderly was not a medical graduate.

COURT'S ANSWER: Yes.

The Appellate Division of the New York Supreme Court, Second Department, said that the general rule that a hospital is not liable for medical acts performed on its premises should not be so far extended as to relieve it from negligence in permitting incompetent employees to perform such acts (103 N.Y. Supp. 2d 859).

The court cited a case in which a private hospital was held liable for permitting a layman to treat a patient by applying a salve touted as being a cure for cancer, resulting in serious injury. The New York Court of Appeals rested its decision on the negligence of the hospital authorities in permitting an unlicensed person to treat a patient in its hospital (Hendrickson v. Hodkin, 270 N.Y. 252, 11 N.E. 2d 899). In another case a charitable hospital was exonerated from liability for a negligent operation performed by a doctor, on the ground that the hospital authorities had no reason to suppose that the doctor was incompetent (283 N.Y. 585, 27 N.E. 2d 899).

PROBLEM: In a suit for disability benefits under a life insurance policy, insured relied largely upon a letter from her doctor to the insurance company as having constituted "due proof" of her disability. The letter merely showed that the insured was a patient at the doctor's sanitarium, found it too fatiguing to deal with financial matters, and so on. Did the insurance company properly disregard the letter as being insufficient proof of present disability?

COURT'S ANSWER: Yes.

The Municipal Court of Appeals, District of Columbia, said that the due proof required in such policies need not be in any particular form, but that it must give the insurance company reasonable opportunity to investigate and test the validity of the claim. As to the doctor's letter, the court said that it mentioned no symptoms and no disability and was consistent with the insured's merely taking a routine rest cure (73 Atl. 2d 512).

PROBLEM: Could a medical specialist, called as a witness to facts concerning the condition of one suing for damages for personal injury, legally refuse to testify unless paid more than ordinary witness fees?

COURT'S ANSWER: No.

The California Supreme Court noted that the doctor was asked to testify, not as a specialist, but because of his knowledge of the al-

legedly injured person's condition. He is like any other witness knowing facts, even though his discovery of those facts was because of his special training.

In support of its conclusions the California Supreme Court cited decisions of appellate courts in the states of Alabama, Illinois, Texas, Wisconsin, and Pennsylvania (231 Pac. 2d 26).

¶The Illinois Supreme Court has gone one step further by deciding that when a doctor voluntarily testifies to the condition of a patient, he cannot refuse to give his opinion as to the cause of the symptoms he detected unless paid a professional fee. The theory was that the opinion asked for was closely related to the patient's condition voluntarily described by the doctor.—A.L.H.S.

PROBLEM: Was an order of a municipal hospital board suspending a physician from the hospital staff void because no notice was given him of charges on which the suspension was based and no opportunity to be heard before adoption of the order?

COURT'S ANSWER: Yes.

The board had adopted rules providing that local practitioners were eligible to staff membership by registering, but that the board could remove from the staff any physician or surgeon when, in its judgment, the good of the hospital and patients so required.

The board adopted a resolution summarily suspending a doctor indefinitely. His suit to enjoin his exclusion from the staff was ordered

dismissed by a county court but, on appeal, the Wisconsin Supreme Court ordered his reinstatement on the hospital staff.

The Supreme Court noted that it had previously decided that no physician could acquire a right to practice in a private hospital without a contract with the hospital (193 N.W. 994). But the court followed the rule laid down by other appellate courts, that a doctor has a right to practice in a public hospital, "so long as he stays within the law and conforms to all reasonable rules and regulations of the institutions" (47 N.W. 2d 328).

In 1926, the U.S. Supreme Court decided that an osteopath could not complain of the exclusion of such practitioners from a state hospital, saying, "In the management of a hospital . . . some choice of methods of treatment would seem inevitable, and a selection based upon a classification having some basis in the exercise of the judgment of the state board is proper" (273 U.S. 414).

In 1949, the Indiana Supreme Court decided that a requirement that a practitioner in a county hospital be a member of the county medical society was void. But the court upheld a requirement that applicants for membership on the staff must have served one year as interns and have had three years of surgical training approved by the American College of Surgeons (84 N.E. 2d 469; 85 N.E. 2d 365).

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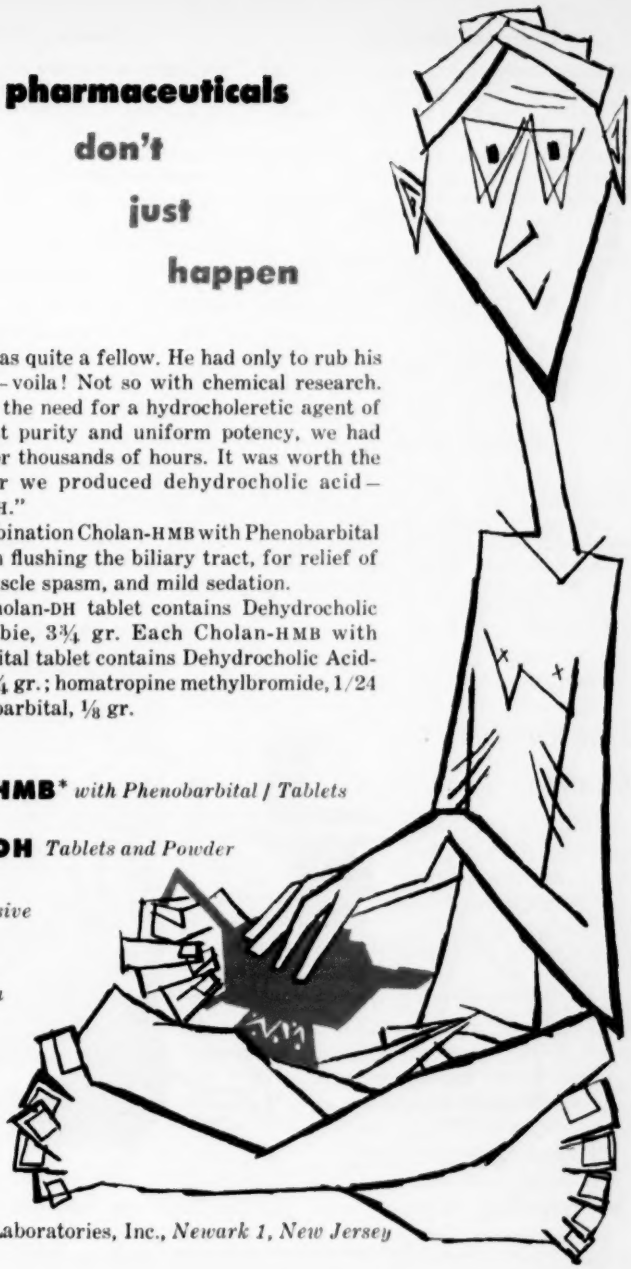

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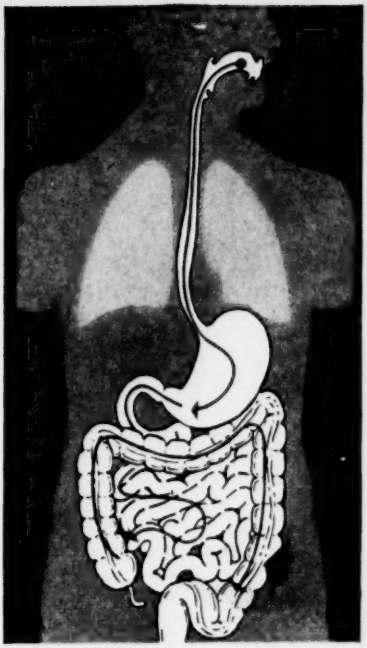

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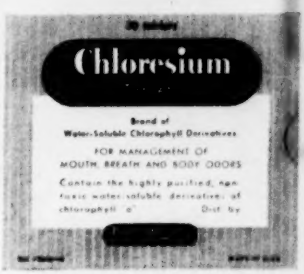

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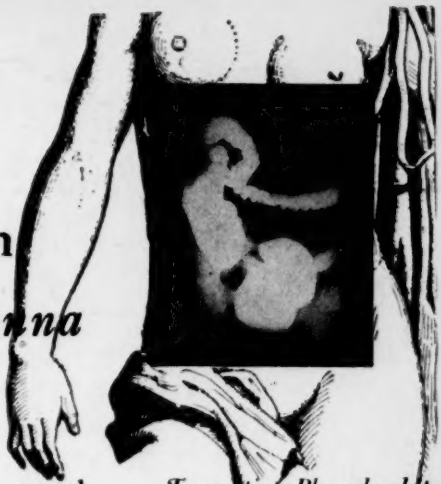

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